NATIONAL PETROLEUM NEWS

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Venezuela Gets 50% Reduction In Oil 'Tariff'

N. P. N. News Bureau

WASHINGTON, Nov. 6.—The excise tax of 21 cents per barrel on imports of crude and fuel oil was cut in half today by the signing at Caracas, Venezuela, of a reciprocal trade agreement between United States and Venezuela.

The treaty provides that the volume of petroleum and products imported under the cut-rate import tax shall not exceed in any one year a total of "5 per cent of the total quantity of crude petroleum processed in refineries in continental United States during the preceding calendar year."

However, it may be pointed out that the average of all imports of crude, topped petroleum and fuel oil for the five years 1933-38 were but 34,569,000 barrels, whereas 5 per cent of total crude runs to stills in 1938 (1,165,015,000 barrels), was 58,251,000 barrels. Thus, under the new treaty, more than half again as much foreign crude may be imported at the cut rate of 10.50 cents per barrel, than has been imported during the past five years at the full duty rate of 21 cents per barrel.

Although the trade treaty is with Venezuela specifically, under the "most favored nation" provisions of our law, the reduction in rate is applicable to imports from other oil producing countries not actually on the U. S. blacklist—there are none at present—up to the "5 per cent." This would permit imports of Mexican petroleum at the reduced rate, as well as oil from Colombia, and other countries.

For any imports over the "5 per cent," the U. S. agrees not to increase the 21 cents per barrel rate until 1942, or until such subsequent time as either country, desires to terminate the agreement on 6 months notice.

State Department Explains

In discussing the concessions granted to Venezuela under the pact, the State Department said:

"The United States' share of the known world reserves of crude petroleum is somewhat less than 50 per cent. On the

(*Continued on page* 29)

FDR Wins 22 States, Loses 23 on Date For Thanksgiving; 3 To Mark Both Days

N. P. N. News Bureau

WASHINGTON, Nov. 6.—Twenty-three states will observe Thanksgiving Day on the traditional day—the last Thursday of this month, Nov. 30; 22 states and the District of Columbia will observe the holiday one week earlier, on Nov. 23, as recommended by President Roosevelt some months ago (to provide more shopping days before Christmas).

Three states, taking neither side in the controversy over which day shall be set aside for giving thanks, will celebrate on both the President's date and again on the traditional "last Thursday of November." They are Colorado, Mississippi and Texas. The President's proclamation was not binding on any state, although it was effective in the District of Columbia.

A complete list of the Thanksgiving Day dates by states, as compiled by the U. S. Information Service, follows:

Dates on Which Thanksgiving Day Will Be Observed in 1939

State	Date
Alabama	November 30
Arizona	November 30
Arkansas	November 30
California	November 23
Colorado	November 23 and 30
Connecticut	November 30
Delaware	November 23
Dist. of Col.	November 23
Florida	November 30
Georgia	November 23
Idaho	November 30
Illinois	November 23
Indiana	November 23
Iowa	November 30
Kansas	November 30
Kentucky	November 30
Louisiana	November 23
Maine	November 30
Maryland	November 23
Massachusetts	November 30
Michigan	November 23
Minnesota	November 30
Mississippi	November 23 and 30
Missouri	November 23
Montana	November 23
Nebraska	November 30
Nevada	November 30
New Hampshire	November 30
New Jersey	November 23
New Mexico	November 30
New York	November 23
North Carolina	November 30
North Dakota	November 23
Ohio	November 23
Oklahoma	November 30
Oregon	November 23
Pennsylvania	November 23
Rhode Island	November 30
South Carolina	November 23
South Dakota	November 30
Tennessee	November 30
Texas	November 23 and 30
Utah	November 23
Vermont	November 30
Virginia	November 23
Washington	November 23
West Virginia	November 23
Wisconsin	November 30
Wyoming	November 23

Independent Marketers Rally To Support of Rail Rate Cut

CHICAGO, Nov. 6.—Illinois Petroleum Marketers' Ass'n. in a special bulletin has asked every independent oil marketer to write to C. E. Perkins, vice-president of the Missouri Pacific Railroad at St. Louis, commending the Missouri Pacific line for its announced intention of reducing petroleum freight rates by 9 cents per hundred-weight (0.6 cent per gallon on gasoline) from the Mid-Continent into Indiana Standard territory. Marketers also were asked to route their shipments over Missouri Pacific line wherever possible.

If the Missouri Pacific stands pat in putting its announced reduction into effect, other railroads will be compelled to follow suit resulting in a savings of from $40 to $50 on every 8000 gallon tank car of petroleum products shipped from the Mid-Continent into Illinois territory, the bulletin said.

Marketers were urged to compile data concerning their shipments of petroleum products and submit it to the association headquarters at Springfield in order that the association might effectively present its case at the hearing scheduled for November 15th before the Interstate Commerce Commission representatives here.

The Wisconsin Petroleum Ass'n. also has urged its members to write a letter of appreciation to C. E. Perkins assuring him of their support.

A. C. Gienapp, secretary of the Iowa Independent Oil Jobbers Ass'n., said his association had taken similar steps and were planning to send as large a delegation as possible to the

(*Continued on page* 21)

Oil Committee Seeks Purposes Of Ickes' Bill

N. P. N. News Bureau
By Teletype

WASHINGTON, Nov. 7.—The congressional oil subcommittee is having difficulties in getting at the purposes of the administration-drafted bill for federal oil control. Several technical men for the Interior Department have testified today and yesterday, but they have shied away from questions about policy and aims of the measure.

Congressman William P. Cole, Jr., of Maryland, chairman of the oil subcommittee of the House Interstate Commerce Committee, introduced the bill (HR 7372) at request of President Roosevelt, who also requested the Cole committee to hold hearings and report to Congress in January.

Not even a member of the Interior Department's legal staff, who aided in drafting the bill, could answer questions of some committee members—for example, whether or not the bill would affect refining and marketing. There was a note of irritation in some members' voices as they failed to get answers.

Indications were that the technical men, who primarily were bringing up to date the Cole committee's statistical and economic data collected in its 1934 35 hearings, were leaving all policy questions for Secretary Ickes to answer when he appears later this week.

In opening the hearings Monday morning, Nov. 6, Chairman Cole (Md.), was specific in pointing out that they had been called at the express request of President Roosevelt, who asked in a letter dated July 22 (NPN, Aug. 2, p. 24F) that his committee's findings in its 1934 investigation be brought up to date.

At the same time the President suggested the oil bill, drafted in the Interior Department, on which the current hearings are being held (printed in full in Aug. 2 NPN), Mr. Cole added.

He said it was his purpose to conclude the present session of the committee this week, at which would be heard the "gov-

ernment side" of the case for the bill. The committee will then adjourn, he said, until sometime in December, when it will be called together at some point outside of Washington not yet determined to hear the representatives of the industry and the state control agencies.

Three Witnesses on Monday

Three witnesses appeared at the first day's hearings—David Hudson, assistant Interior Department solicitor, who aided in drafting the bill; H. D. Miser, Geological Survey geologist, and A. C. White, chief economist, Petroleum Economics Division, Bureau of Mines.

Mr. Hudson, who summarized the proposed bill, was subjected to sharp questioning by committee members — chiefly Reps. Mapes, Mich., and Wolverton, N. J., although the others joined in the questioning also.

After some questioning of the witness, Mr. Wolverton observed that the bill's fundamental purpose appeared to him to be to supplant state authority with federal authority. A little later, Mr. Mapes declared there were two questions in his mind which must be laid at rest in connection with the bill. The first was as to whether there is any unreasonable waste in connection with petroleum production now, and the second (assuming that the answer to the first is affirmative), as to whether the federal government could correct it better under the bill than the state authorities and the oil industry itself.

Rep. Pearson, Tenn., queried the witness, also, as to the "final determination" which the bill seemed to him to leave with the proposed oil commissioner as to declaring what is and what is not waste prevention in the voluntary agreements which the bill would permit among operators.

The witness said there was no direct recourse provided for from this determination, only from the regulations which the federal commissioner might set up to supplant the rejected voluntary agreement.

At the outset of his testimony Mr. Hudson was asked by Rep. Wolverton if there was any difference between this bill and the so-called Margold bill (which was drafted but never introduced in 1934). The witness said he did not know, and under questioning said he had been in the department at the time the Margold bill was drafted, but knew nothing about its provisions.

Both Mr. Mapes and Mr. Wolverton questioned the witness at length as to the "purpose" of the bill—"Does it directly or indirectly seek to control marketing?" the latter asked. Mr. Hudson said it did not, that its only purpose is to prevent physical waste.

N.P.N. Editorial Quoted

Replying, the New Jersey congressman said he had heard and read charges that the bill's aim was to control not only production but the refining and even the marketing branches of the industry, and quoted at some length from an editorial in NATIONAL PETROLEUM NEWS on August 2 which attacked the bill on this ground.

Mr. Wolverton further pointed out that, to him, the bill seemed to provide that whenever a regulation of the federal petroleum commissioner was at variance with a state regulation, then it superseded the state rule. The witness said he thought it did not go this far, but that "if the commissioner found the practices wasteful", he might set up a more restrictive production practice than allowed under state orders.

Committee members indicated they could see no difference between this method of stating the case and the way they had stated it.

The NPN editorial, and other expressions against the bill which he had heard and read, Mr. Wolverton declared "seem to show that there is a fear on the part of some that this bill would place in a federal bureaucracy a power which should be lodged in the states."

After more questioning, Mr. Hudson said he was not qualified to discuss the purposes of the bill, that he had merely aided in the drafting of the measure, and that witnesses to follow him would discuss its purposes.

Radio Broadcasts Cited

Mr. Mapes expressed "interest" in the Interior Department broadcasts (see NPN, Nov. 1, p. 16) melodramatically propagandizing in favor of the Cole bill, and asked the witness if he had anything to do in their preparation. "I have no information about them," the witness said.

The Michigan Representative also questioned the witness on "how big an organization" would be necessary to make an investigation of all the oil fields in the country, as contemplated by the bill. He said he did not know, but that the bill did not provide for its being done all at once—that it could be done over a period.

Mr. Mapes said he had sat in on most of the hearings of the Monopoly Committee on oil, and that he had the impression a "material improvement" had been made by the states and the industry during the past few years in prevention of waste.

Mr. Miser followed Mr. Hudson, filing a lengthy report purporting to bring certain technical phases of the Cole Committee's 1934 hearings up to date. He said there are now approximately 17 billion barrels of proven reserves (as of Jan. 1 this year), and that reserves have increased some 4,000,000,000 barrels during the past five years (since the committee's earlier investigation), although some 5,500,000,000 barrels of oil have been produced in the meantime. He said he would hesitate to translate the 17,000,000,000 barrels into years' supply, and, on questioning by Mr. Mapes, said he had heard of the estimates fixing the reserves at 20 or 22 billion barrels, because of discoveries in the past few years, but that he hadn't seen any actual figures on them.

Mr. Miser said he was not consulted in drafting of the bill, and declined to answer a number of questions concerning it on that ground.

1,415,000,000 Barrels in 1939

Discussing the general trend in market demand for all oil over the period since the last report of the Cole committee, Mr. White estimated 1939 demand at 1,415,000,000 barrels, an increase of 380,000 000 barrels, or 37 per cent over 1934. Of this, he said, about 300,000,000 barrels represented domestic demand and about 80,000,000 barrels exports.

Rep. Mapes asked Mr. White, as he had previous witnesses, if he thought the bill had any bearing on marketing. Mr. White said he did not think so; that it only related to prevention of physical waste. On questioning by Mr. Wolverton, the witness said that production control could not help but have some relation to price.

During Mr. White's testimony Mr. Wolverton again referred to the department's radio broadcasts as "going quite a long way" in promoting a bill which would control price.

The witness answered that "when you get into the policy and purposes of this bill" the committee should question the men who drew it up, and who are "advocating" it.

Breakey Opens Tuesday

Dr. H. A. Breakey, Bureau of Mines economist who is directly in charge of making the Bureau's monthly forecast of motor fuel and crude oil demand, opened the Tuesday testimony with a description of how the forecast is made.

In response to a question from Rep. Cole—"how do you cut this pie between the producing states?" Dr. Breakey explained that after he arrives at the total estimated demand for motor fuel by taking into consideration the number of motor vehicles in use, the consumption of fuel per vehicle, business conditions, weather, and other factors, he estimates how much gasoline will be used in each of the 11 refinery districts into which the country is divided by the Bureau.

Asked About Forecasts

Then, he said, he estimates how much motor fuel will be exchanged between the districts, then the amount of natural gasoline which will be used in production of the motor fuel, then how much foreign crude will be used in making the fuel. All these estimates, he said, are based on best available statistics.

On the basis of data received from refiners as to their sources of crude oil, the Bureau then estimates how much crude will be needed to supply the demand from each state.

Asked by Rep. Cole if his forecasts take into consideration the potential output of each of the producing states, Dr. Breakey said they did not, that they were based on demand alone.

Dr. Breakey, like previous witnesses, was asked about what the bill might be expected to accomplish. Rep. Mapes asked him if he thought the bill, or one like it, would be desirable to take care of one state, like Illinois (which had been mentioned by the witness as a state which did not follow the Bureau of Mines forecasts). Dr. Breakey said "I haven't studied the bill over. I just got back from a field trip and was told I was to testify here. I wouldn't be able to answer that question."

Other witnesses who appeared before the committee to submit technical papers to "bring up to date" the earlier report were A. H. Redfield, Bureau of Mines import and export specialist, and A. J. Krafmer, Bureau refinery technician.

After he had discussed exports and imports, Mr. Redfield was asked what he thought "we ought to do about exports" to promote conservation.

"I have no recommendation," Mr. Redfield said, adding that the Bureau is a "fact-finding agency," and that he was not qualified to discuss questions of policy.

New Law Permits Shipments To Many Neutral Countries

N. P. N. News Bureau

WASHINGTON, Nov. 6.—Effect of the new cash-and-carry neutrality law on the oil industry in this country is difficult to forecast so early in the law's life, but its provisions are plain, and opinion here seems to agree that U. S. exports of petroleum and products—in total volume—will be little affected by the law in itself.

For one thing, the law definitely bars shipments in American flag vessels to most of northern Europe. It will not, however, (unless further Presidential proclamations are issued) have any effect on their movements to ports in many non-belligerent countries, such as Italy, Spain, Portugal, Yugoslavia, Greece, Turkey, Roumania and Bulgaria. They may also go to ports in Norway north of Bergen.

Creation by the President of a "combat zone" covering the British Isles and adjacent waters, as well as the North Sea, Baltic Sea, Gulf of Bosnia, English Channel and Bay of Biscay, though, cuts off American-flag shipments, ostensibly because of the danger from submarines, from such neutral countries as Belgium, Holland, Denmark, Sweden, Estonia, Lithuania and Latvia. Shipments in U. S. flag boats to the belligerent nations of Europe—England, France and Germany—is of course forbidden by the law, and any export to them at all is barred unless the goods are paid for before leaving these shores.

In delineating the combat zone, President Roosevelt said it might be changed from time to time should the situation warrant—some zones now considered dangerous might become safe, and vice versa, he explained.

California-Canada Shipments OK

Shipments in American vessels to "any port in the Pacific or Indian Ocean, including the China Sea, Tasman Sea, Bay of Bengal and the Arabian Sea, and any other dependent waters of such seas or bays. . ." are specifically exempted from the cash-carry provisions, unless they may be included in a combat zone proclaimed later.

This means that petroleum products may continue to move from the United States to trans-Pacific ports in Russia, Japan, China, Australia, New Zealand, India, etc., as well as to Canadian Pacific Coast ports, without the necessity of first having transferred title to the purchaser.

Shipments of petroleum overland or by inland waterway, lake or river, to Canada, likewise are exempted from the cash-carry provisions, as are shipments to certain Canadian Atlantic Coast ports west of 66° West Longitude—but there is no exemption for shipments which go to ports east of this meridian, although shipments up the St. Lawrence to the Dominion's large ports on this river, under present interpretation, will be exempted, so long as the ports are "west of 66°."

New York Sees Little Change

N. P. N. News Bureau

NEW YORK, Nov. 6.—While traders here generally said that it was too early to determine effect of new neutrality law on oil shipments, it was pointed out that very few American-owned tankers flying the American flag have been moving petroleum to belligerents. So on this score, the cash and carry provision will make little difference.

Reports continued to persist that English and French buying commissions would operate more openly since the passage of the Neutrality law. Traders here, however, said that purchasing and handling of oil exports from this country would continue in the same channels which have been responsible for this movement since the outbreak of war.

Gulf Refiners Expect Pickup

TULSA, Nov. 6.—Gulf Coast refiners believe that enactment of the Neutrality law will result in more active movement of oil to France and England on orders placed weeks ago, but which they had been forced to put in storage. Widening of the convoy system now is expected. This, they said will probably increase the number of neutral-flag boats accepting movements to belligerents.

Florida Tax Receipts Rise

TALLAHASSEE, Fla., Nov. 6.—Florida's 7-cents per gallon gasoline tax brought the state $1,751,062 in September, 8 per cent above collections in September 1938.

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Oil Transportation News

Latest developments in freight rates, legislation, taxes, regulations, and new construction affecting the transportation of petroleum products by truck, barge, tanker, pipeline, and railroad.

ICC Sets Date for Argument On 'Too Low' Oil Truck Rates

N. P. N. News Bureau

WASHINGTON, Nov. 6. — Oral argument will be held here Dec. 6 before the Interstate Commerce Commission on the proposed report of ICC Examiner Frank E. Mullen, who recommended to the Commission last August that it find truck rates on petroleum products from California to Arizona to be "unreasonably low" in that they are less than those maintained by railroads for a similar movement.

Examiner Mullen's report (NPN Aug. 30, page 20) grew out of hearings which he held earlier in the year on an investigation instituted by the ICC on its own motion, following rate reductions in the affected area by both rails and trucks.

Mullen pointed out in his report that the ICC in 1929 prescribed 70 cents per 100 pounds (about 4.62 cents per gallon for gasoline) as a reasonable maximum rail rate from Los Angeles to Phoenix and a number of other Arizona points. Since that time, he said, motor carriers have stepped into the picture with successively lower rates and the rails have followed with successive reductions to retain the tonnage, with the result that the present rail rate from Los Angeles to Phoenix is 33 cents (2.178 cents per gallon on gasoline).

At the hearing the truckers said their costs for transporting this traffic were higher than those of the railroads, and some of them asked the commission to order that the rail rates on refined petroleum products be increased to a level which would permit the truckers to continue to participate in the traffic and to earn a profit. In their brief they said that they believed the commission had authority "to increase the rates of one transportation agency, even though they may be compensatory, if such a step is essential to prevent destructive competition and to preserve to the public the benefits flowing from healthy competition between two agencies of transportation whose perpetuation is in the public interest."

Gulf to Build 'Gas' Pipeline, Port St. Joe, Fla., to Atlanta

N. P. N. News Bureau

CLEVELAND, Nov. 6.—Gulf Oil Corp. has purchased pipe for a 450-mile gasoline pipeline to Atlanta from Port St. Joe, on the Florida Gulf coast just east of Panama City, according to reports in steel circles here. Gulf officials would not comment on the report.

Reports are that most of the line will be of 8⅝-inch seamless pipe, with the remainder of 6⅝-inch pipe.

There has been talk for several years of a gasoline pipeline from Birminghamport, some 400 miles upriver from Mobile, to Montgomery, Ala., and Atlanta, as well as lines from coastal cities along the lower Atlantic seaboard to inland points. But so far nothing has come of it.

A waterway project for the Chattahoochee river, providing navigation up to Columbus, Ga., has been pushed by local interests for some years, who have cited potential oil tonnage as a principal argument. The Gulf pipeline presumably would pass through Columbus.

Presumably, Gulf would ship by tanker or barge to Port St. Joe, which is on the Intracoastal Canal, a sheltered route for barges from Gulf Coast refineries in Louisiana and Texas.

Several independent marketers have been barging to their Florida terminals along the inland waterway, reshipping by transport trucks into Georgia, Alabama and Florida.

Magnolia Plans 138-Mile Line

N. P. N. News Bureau

TULSA, Nov. 6. — Magnolia Petroleum Co. (Socony-Vacuum) is reported to have let contracts for a 138-mile gasoline pipeline from Corpus Christi to San Antonio, Texas. Gasoline would be barged to Corpus Christi from the company's refinery at Beaumont, Tex.

Oklahoma Transporters Plan Meeting Nov. 25

N. P. N. News Bureau

TULSA, Nov. 6. — Petroleum Transporters Division of Associated Motor Carriers of Oklahoma is planning a meeting for Nov. 25, probably at Oklahoma City, for election of officers and organizing on a permanent basis.

R. L. Williams

Roy L. Williams, Enid, of R. L. Williams Tank Line, was chosen as temporary chairman when the division was set up several months ago. Other members of the board of directors selected then were R. J. Allison, Tulsa; Jeff Boucher; H. L. McKee, Enid; Henry Adams, Shawnee; and Earl Bray, Cushing.

The transporters' organization already includes a good percentage of the nearly 100 oil truckers in Oklahoma, not including oil marketers hauling for themselves. The division is affiliated with the Five-State Conference of Petroleum Transporters and, through the A.M.C.O., with the American Trucking Ass'ns, Inc.

Globe Rate Hearing Reset

N. P. N. News Bureau

WASHINGTON, Nov. 6. — Postponed hearings on complaint of Globe Oil & Refining Co. against charges for rail shipment of petroleum products from its Lemont, Ill., refinery, as compared with charges assessed its competitors to the same destinations in Indiana and lower Michigan, are now set for Chicago, Dec. 13, before an Interstate Commerce Commission examiner. (See N.P.N., Aug. 9, P. 17.)

Refiners Seek Oil Rate Cuts To Gulf Ports

DALLAS, Tex., Nov. 6.—Actual and anticipated demand for petroleum and products from export and coastwise channels has led shippers to file numerous applications with the Texas-Louisiana Freight Bureau for reduced rail rates from inland Texas origins to Gulf coast ports. Applications for reduced rates cover a wide variety of crudes and petroleum products and are to be heard in Dallas, Dec. 5. Originally Nov. 7 had been set as date for hearing.

Due to the "opening of new market" in the Houston area for fuel oil, shippers ask for a 11 cents per hundredweight rate on this commodity from Wichita Falls, Tex. to Houston. This market, it was said, cannot be developed unless lower rail rates are obtainable.

A 10.5 cents per hundredweight rate is requested for topped or reduced crude moved by rail from Coleman, Tex. to Houston, Galveston and Texas City. Movement of this oil to market is contingent on publication of the reduced rate of 10.5 cents, the application points out.

Reduced rates on asphalt from Mt. Pleasant, Tex. to New Orleans and several other Louisiana points have been asked by one refiner. A prospective movement of asphalt to New Orleans and subports is indicated by the shipper, who said business would not develop unless transportation charges are equalized with those to Houston, Tex.

Natural Gasoline Rate Sought

Because there are not now any through export rates on natural gasoline from several Texas producing points to Port Isabel, shippers ask for such rates because of expected regular movements of natural into export and coastwise channels. Application calls for a 24 cents per hundredweight rate from Albany, Arab, South Hanlon and Tomburnett, Tex., a 25.5 cents rate from Kermit and Odessa, Tex., and a 26 cents rate from Bellco and Fritch, Tex. to Port Isabel.

A $3.50 per-ton rate on petroleum coke and coke breeze shipped from Amarillo, Tex. to Beaumont, Galveston, Houston,

Port Arthur and Texas City to apply only on export and coastwise shipments has been applied for. Considerable movement between points named was assured by the shipper.

Another application requests a 11 cents per hundredweight rate on fuel oil from Lueders, Tex. to Houston, Galveston and Texas City.

Seattle Transporter Extends Operations

N. P. N. News Bureau

WASHINGTON, Nov. 6.—Interstate Commerce Commission has granted a common carrier permit to The Petroleum Transportation Co., Seattle, Wash., for transportation of liquid petroleum products in tank trucks from The Dalles and Umatilla, Ore., and Attalia, Wash. to points in Idaho and Washington.

Extension of barge operations on the Columbia River up as far as The Dalles, Umatilla, and Attalia, would create a situation where the company "would be faced with the possibility of losing a large percentage of its former business" of hauling from Puget Sound to points east of the Cascade Mountains, ICC says, unless the new permit were granted. "We should view the issues herein as merely permitting applicant to continue to perform the same service as it has heretofore," ICC said.

Rails May Fight Texas Order Eliminating Differentials

DALLAS, Tex., Nov. 6.—Petitions are expected to be filed this week with the Texas Railroad Commission seeking a 90-day postponement of the commission's order abolishing differential in Texas intrastate rail rates Nov. 20. Rails indicate they want to study long-range effects of the order.

Rate differentials were added to normal rates when certain areas, such as West Texas, were small producers of railroad tonnage. But now, testimony at recent hearings indicated, these areas are heavy producers of tonnage and necessity for charging higher rates is no longer necessary.

Jersey Launches New Tanker

NEW YORK — Standard Oil Co. of N. J. has launched another tanker, 6,000,000-gallon capacity and 18-knot speed. It was christened "Esso Trenton" by Mrs. Clara Esselborn, mother of Herman J. Esselborn, Jersey company official.

Independent Marketers Rally To Support of Rail Rate Cut

(*Continued from page* 17)

November 15th hearing at Chicago.

The Northwest Petroleum Ass'n., while not as directly effected by the proposed rate reduction as other midwestern state associations, has asked its members to back the Missouri Pacific Lines in its attempt to secure lower petroleum rates from the Mid-Continent into Mid-Western territory. Representatives of the Ass'n. will be present at the Nov. 15th hearing.

M.I.O.J.A. on Bandwagon

The Missouri Independent Oil Jobbers Ass'n. was one of the first to get behind the Missouri-Pacific rate cut, wiring in their congratulations and pledging co-operation immediately after the line's announcement.

A five-man delegation will represent the Indiana Independent Petroleum Ass'n. at the Chicago hearings Nov. 15th the Petroleum Rail Shippers Ass'n. complaint against "discriminatory" transportation charges, seeking to equalize freight costs. At the Dallas hearings last month, H. A. Hollopeter, Indianapolis traffic attorney, appeared and supported the P. R. S. A. on behalf of the Indiana association.

Brokers in the Chicago area also were wholehearted in their approval of the proposed reduction indicating that should the reduction be approved it would stimulate movement of petroleum products into their territory. Shipments of petroleum products from Group 3 particularly of gasoline and heavy fuels have been curtailed to a large extent since the development of the new southern Illinois and Michigan fields. Tank car marketers expressed the opinion that much of this business could be restored to Mid-Continent refiners should the proposed reduction be put into effect.

Private Truck Owners to Meet

NEW YORK, Nov. 6.—Annual meeting of the National Council of Private Motor Truck Owners, Inc., representing owners of approximately 1,500,000 commercial vehicles in industry, including oil, and agriculture, will be held Monday, Nov. 27, at Pennsylvania Hotel, New York City. Officers of the council include, as vice-president for western district, James C. Bennett, California Oil and Gas Ass'n.

Indiana Farm Bureau Plans Refinery on Ohio River

CHICAGO, Nov. 6. — The Indiana Farm Bureau (co-operative) has completed plans for a $250,000 refinery on the Ohio River near Mt. Vernon, Indiana.

Capacity of the plant will be 2500 barrels daily. Finished products will include straight run gasoline, kerosine, tractor fuel, domestic and industrial fuel.

Ralph Booker, assistant manager of the Bureau's oil division will be refinery manager.

Nebraska Marketers Meet At Omaha, Dec. 5

LINCOLN, Neb., Nov. 6. — Annual convention and election of officers of Nebraska Petroleum Marketers, Inc., will be held at the Hotel Fontenelle, Omaha, Dec. 5, 6 and 7, according to Frank S. Henline, secretary.

An attendance of 1000 is expected, Mr. Henline says, and already more than 50 oil supplying companies, compounders, equipment makers, tire, battery and accessory firms have indicated that they will attend, many with exhibits.

Speakers are being lined up and a banquet and entertainment are planned for Dec. 6.

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November Snows Help Sell Winter Change-Over

The first real snowstorms of the season, hitting many parts of the country the first week in November, helped oil marketers in their Winter Change-Over campaigns by warning motorists generally the time is here when their cars must be made ready for safe and comfortable winter driving. The picture is of Cleveland's first snowstorm that whitened the ground. Photo from Cleveland Press

Keep Track of Change-Over Sales For Listing on NPN Honor Roll

● Oil marketers and managers of oil marketing companies who show a gain in Change-Over sales in November, from November a year ago, will be listed on the Roll of Honor of Change-Over "Star" Marketers NATIONAL PETROLEUM NEWS will publish in December.

Marketers whose November Change-Over sales show a 25 per cent increase over November, 1938, will be listed as SILVER STAR MARKETERS.

Marketers who increase their sales 50 per cent will be GOLD STAR MARKETERS.

Those showing a 100 per cent increase will be DIAMOND STAR MARKETERS.

All the "Star" marketers will receive from NATIONAL PETROLEUM NEWS a Certificate of Honor as evidence of their ability in Winter Change-Over merchandising.

All that marketers have to do to get their names on the Honor Roll is to write NPN, on their company letter heads, giving their sales of motor oils, greases, special lubricants, radiator compounds, new batteries and tires and other accessories that are part of winter conditioning sales, in November, in percentage increases from November, 1938, sales. Gasoline sales are not to be included.

Keep track of your Change-Over sales by items and help swell the interest in this year's BIGGEST CHANGE-OVER CAMPAIGN, by sending in your name, on your company letter head, and your sales increases as soon after Nov. 30 as possible.

Early Storms Catch Motorists Unprepared for Winter Driving

Freezing weather swept across most of the country the first week in November, bringing with it increased opportunity for oil marketers to push their Winter Change-Over campaigns. Stalled cars and frozen radiators were the penalties of many motorists who had neglected winter conditioning their automobiles.

While one quick cold snap is not a winter, it does mean winter is near, and the danger of driving with a car not protected for winter driving can be emphasized as a selling point to get Change-Over business.

November is the month for the oil marketer to intensify his selling efforts to get all customers to have their cars changed from summer to winter grade lubricants. It is also the time to stress the sale of anti-freeze, heaters, batteries, and tires for safe winter driving. Hard starting and shifting, and the danger of a freeze up caused by the cold wave last week can be used to break down the resistance of motorists who have delayed so far having this work done.

Weather conditions in other sections of the country can be used in selling the Change-Over, despite the fact that warm weather may have ruled in a marketer's territory. In conversation with customers, or on station bulletin boards, and in mailing pieces sent to customers, the station operator can point to snow and cold weather in nearby sections.

Freezing weather was reported by the Weather Bureau last week throughout the Rocky Mountain, Great Lakes, middle Appalachian and middle Atlantic Coast areas, the Missouri, Mississippi and Ohio valleys, New England, and as far south as Texas.

Charleston, S. C., Birmingham, Ala., Oklahoma City, Tulsa and other sections of the south have felt freezing temperatures, with snow reported in Oklahoma and parts of north Texas. An early-season snowstorm blanketed the Blue Ridge Mountains and the Shenandoah valley of Virginia and western Maryland Nov. 5, stalling automobiles, many of which were reported not prepared for the storm.

The following cities, which cover most of the country show that November, running true to form, is providing cold weather to aid marketers in selling the Winter Change-Over. Low temperatures reported in the following list of cities last week were:

Below Freezing in Most Cities During First Week in November

Albany	21
Baltimore	29
Bismarck, N. D.	18
Birmingham, Ala.	23
Boston	31
Buffalo	22
Chicago	32
Charleston, S. C.	31
Chattanooga	29
Cincinnati	21
Cleveland	28
Des Moines	26
Dallas	31
Detroit	27
Denver	27
Duluth	25
Elkins, W. Va.	30
Helena	25
Indianapolis	22
Kansas City	22
Louisville	32
Milwaukee	29
Minneapolis	25
Nashville, Tenn.	25
Portland, Me.	32
Pittsburgh	27
Richmond, Va.	31
Oklahoma City	28
Omaha	25
St. Louis	29
Spokane	27
Washington, D. C.	31

Winter Change-Over Issue Is Sold Out

While NPN ordered a large extra press run on its Nov. 1st Winter Change-Over Campaign number, these extra copies melted away as quickly as the early snows of last week, which, however, put drive into the oil marketers' winter conditioning campaigns.

Some oil companies ordered extra copies as soon as a copy hit the desk of the chief marketing executive. One tire company division manager, about to hold a sales conference, ordered copies for all the salesmen and advised them to subscribe regularly to NATIONAL PETROLEUM NEWS.

While no complete copies of the Nov. 1st issue can be supplied in quantities, all the articles in that issue on the Change-Over Drive, last minute punches for oil marketers, how to tie sales of batteries, tires and light bulbs into the campaign and others—16 pages—can be had quickly in reprint form.

For prices on these reprints in quantities, write or wire Editorial Department, NATIONAL PETROLEUM NEWS, Cleveland.

Kansas Retailers Discuss City Price Posting Rule

TOPEKA, Kan., Nov. 3.—Price posting, how to improve petroleum retailing, and oil hearings of the Temporary National Economic (Monopoly) Committee at Washington, were the subjects of the principal addresses delivered at the first annual meeting of the Petroleum Retailers Ass'n. of Kansas, held Oct. 31 at Topeka, according to E. E. Heidt, president, Topeka.

W. W. Fowler, Augusta, Kansas state legislator, in his talk on "Ways to Improve Retailing of Petroleum Products in Kansas," indicated that he believed regulatory control of retailing through legislation is the most effective means of improving retailing, providing the retailers co-operated by organizing and showing a united front.

R. V. Bullock, Topeka, reported on the recent convention at Des Moines of the National Ass'n. of Petroleum Retailers. A bulletin from the latter to the directors of the Kansas state association was read, to acquaint the latter with the program outlined by the N. A. P. R. for the coming year.

In the president's report to the Kansas association, Mr. Heidt criticized an unnamed major oil company, marketing in Kansas, for selling its products on price appeal only, deploring the discontinuance of the "time-honored method of selling quality," he said.

Most major companies and their subsidiaries in Kansas are telling their lessees and dealers that they can no longer expect to make a living off sales of gasoline and oil, alone, Mr. Heidt said.

L. A. Hartley, executive secretary of the Kansas City retailers association, briefly summarized testimony of Woody Hewitt, president of the Kansas City group, and himself, at the TNEC hearings in Washington.

F. H. Wellman, Topeka, explained the price posting ordinance now before the Topeka City commissioners. He related how he had brought out an interesting point written to the manufacturer of an automotive accessory, sold under the state Fair Trade Act, and told of it being advertised in a mail order catalog as a premium with the mail order company's merchandise. The president of the manufacturing company replied immediately, assuring him that the matter would receive prompt attention, he added.

Directors elected for the coming two years are: L. W. Johnson, O. L. Dill and Walter Smith, Kansas City; R. V. Bullock, E. E. Heidt and Seth C. Lemons, Topeka; E. A. Jeffrey, Manhattan; J. W. Marshall, Augusta; Elmer Logan, Leavenworth; C. Ray Baer, Abilene; and W. A. Woodburn, Pleasanton.

Suit Postponed On 'Leaded' Gas

N. P. N. News Bureau

NEW YORK, Nov. 2.—Suit for $750,000,000 liquidated damages and an accounting of profits from sale of Ethyl gasoline, filed by Howard-Vaughan, Co., Inc., Buffalo, has been continued until Dec. 4, over defendants' protests, by chancery court in Trenton, N. J.

Defendants named were Standard Oil Co. of N. J., General Motors Corp., Socony-Vacuum Oil Co., E. I. du Pont de Nemours & Co., and Ethyl Gasoline Corp.

Plaintiff's counsel asked the postponement, stating that several of its witnesses were not present and alleging that defendants had prevented them from testifying. Suit was based on a "secret formula" said to have been developed by Dr. Francis A. Howard, Hoboken, N. J., who was one of plaintiff's witnesses allegedly prevented from appearing. Charges were made also of a "bribery check" for a million dollars, made out to a deceased patent attorney and now said to be held by Dr. William P. Gerlach, of California. Defense counsel denied the charges.

James D. Carpenter, appearing for General Motors, denied all plaintiff counsel's allegations, producing what purported to be an affidavit from Dr. Gerlach denying knowledge of any alleged bribery check.

Jersey Group Plans Meeting

NEWARK, N. J., Nov. 2.—Officers and directors of the New Jersey Oil Trade Ass'n. will be chosen at the annual meeting and banquet, to be held Dec. 7 at the Robert Treat Hotel, Newark. Candidates are being selected by a nominating committee headed by Frank G. Campbell, Sun Oil Co.

Lawrence A. Ryan, Fiske Bros. Refining Co., vice-president, will succeed to the presidency, according to Joseph H. Gunn, executive secretary. President for the past two years has been T. W. Osbahr, Solar Fuel Oil Co., Passaic.

Milton Maybaum, National Oil & Supply Co., Newark, is chairman of the arrangements committee, and Mr. Ryan, of the entertainment committee which plans a floor show to follow the banquet.

A substantial growth in membership and an expansion in activities are reported for the past year by Secretary Gunn.

'P and L' Breakdown on More Companies Reporting to TNEC

(000 *Omitted;* †*Indicates Loss*)

Company and Item	Total	Production Amt.	Production % of Total	Transportation Amt.	Transportation % of Total	Refining and Manufacturing Amt.	Refining and Manufacturing % of Total	Marketing Amt.	Marketing % of Total
Ashland Oil & Refining Co.									
Total Assets	$ 5,614	$ 1,440	26%	$ 542	10%	$ 2,255	40%	$ 1,164	21%
Net Income	$ 674	$ 146	22%	$ 70	10%	$ 412	61%	$ 44	7%
Ratio to Total Assets	1 to 8	1 to 10		1 to 7.7		1 to 5.4		1 to 26	
Barnsdall Refining Corp.									
Total Assets	$10,890					$ 4,787	47%	$ 5,271	53%
Net Income	$ 1,314†					$ 850†		$ 464†	
Ratio to Total Assets									
Champlin Refining Co.									
Total Assets	$10,006	$ 1,369	13.6%	$ 1,367	13.7%	$ 407	4.1%	$ 2,751	27.5%
Net Income	$ 399	$ 353		$ 180†		$ 478		$ 32	
Ratio to Total Assets	4%	2.6%		13.2†		117.6		1.2	
Cosden Petroleum Corp.									
Total Assets	$ 6,606	$ 1,589	24.06%	$ 1,097	16.61%	$ 2,754	41.7%		
Net Income	$ 137	$ 11	8.12%	$ 156	114.34%	$ 351	255.87%		
Ratio to Total Assets	.0208	.0070		.1430		.1274			
Hickok Oil Corp.									
Total Assets	$15,122	$ 232	1.53%	$ 40	.27%	$ 67	.45%	$14,771	97.67%
Net Income	$ 1,875	$ 33†	1.8%†	$ 1	.10%	$ 7	.38%	$ 1,899	101.32%
Ratio to Total Assets	.124 to 1	.146 to 1†		.045 to 1		.107 to 1		.129 to 1	
Lion Oil Refining Co.									
Total Assets	$17,442	$ 9,108	53%	$ 847	5%	$ 3,364	19%	$ 1,904	11%
Net Income	$ 1,183	$ 1,316	111%	$ 192	16%	$ 23†	2%†	$ 13†	1%†
Ratio to Total Assets	.07	.14		.23		.01†		.01†	
The National Refining Co.									
Total Assets	$20,806	$ 2,563	12%	$ 628	3%	$ 7,859	38%	$ 8,545	41%
Net Income	$ 528†	$ 3†		$ 254		$ 443†		$ 417†	
Ratio to Total Assets	3			41		6		4	
Richfield Oil Corp.									
Total Assets	$89,150	$18,050	20.25%	$ 9,200	10.32%	$31,050	34.83%	$15,400	17.27%
Net Income	$ 2,400	$ 150	6.25%	$ 500	20.83%	$ 100	4.17%	$ 3,200	133.33%
Ratio to Total Assets	2.94%	.83%		5.43%		.32%		20.78%	
American Republics Corp.									
Total Assets	$19,537	$12,381	63.37%	$ 1,056	5.41%	$ 1,629	8.34%		
Net Income	$ 174†	$ 43†	25.04%†	$ 52	30.08%	$ 262†	150.11%†		
Ratio to Total Assets	1:111.74†	1:282.73†		1:20.08		1:62:07†			
Danciger Oil & Refining Co.									
Total Assets	$ 5,789	$ 3,552	61.4%	$ 285	4.9%	$ 1,951	33.7%		
Net Income	$ 132†	$ 143		$ 10†		$ 265			
Ratio to Total Assets	2.28%†	4.05%		3.61%†		13.63%†			
Quaker State Oil Refining Corp.									
Total Assets	$17,792			$ 364		$ 7,865		$ 8,581	
Net Income	$ 539			$ 4†	.0085†	$ 121	.2252†	$ 1,096	2.0308%
Ratio to Total Assets	.0303			.0003†		.0068†		.0616†	
South Penn Oil Co.									
Total Assets	$43,519	$16,414	37.72%	$ 3,088	7.10%	$ 4,972	11.42%	$14,416	33.13%
Net Income	$ 1,783	$ 904		$ 653		$ 539†		$ 433	
Ratio to Total Assets	4.10%	5.51%		21.14%		10.86%†		3.00%	

THE READERS' FORUM—ON—

Government's Relations with THE READER'S Oil Business

Contributions are invited. Please address them to the attention of Warren C. Platt, Editor.

NEW DEAL Would Set "Mind Reader" To Fix Prices, Quantities and Uses of Oil

By WARREN C. PLATT, Editor

This editorial belongs in this "Readers' Forum" because it gives the facts and a fair analysis of probably the most drastic bill ever introduced by any elected officers of this government, against this oil business.

I, the editor, try to give a fair conception of what the words in that bill to control the oil industry, are and seem to say.

These words seem to say that one man in Washington will be given full power to regulate in every state and regardless of "states' rights" not only the flow of oil from the well, but its flow through refineries and its manner of handling out through the marketers and service stations.

These words seem to give this single man at Washington such power that by manipulating supply and demand he can fix prices.

These words seem to give that man power to prescribe what petroleum products will be made and how they will be used.

And further, and I assure you this is no fairy tale, but the printed document, introduced on the order of President Roosevelt and our Secretary of the Interior, says that if this single individual in Washington even so much as thinks that you are "about" to do something that he thinks may violate any of his regulations—not what you may think—then he can proceed to try and throw you in jail and fine you, and keep your oil from moving in interstate commerce.

But as you value your business and your personal freedom, read on. Full copy of the writing of this weird hand reaching from the depths of Russia, will be found on Pages 24 f to 24 h in NPN of August 2nd. W.C.P.

Ex-Oil Administrator Ickes, but still Secretary of the Interior, appears to be reaching for the bottle neck of the oil industry, the flow of crude to the industry's 250 chief refineries and the flow of products to the whole country from them.

This seems to be a moderate statement indeed of the powers that would be given government by the proposed Roosevelt-Ickes oil "conservation" bill now being investigated by the special Cole Congressional Committee. There are many ways, an examination of the proposed law, apparently discloses, by which control of the industry could be exercised.

During the code days, when Ickes' own incompetent administration of the code and his few duties in regard to "hot oil", had failed to accomplish any beneficial results, he was introduced by the oil industry, to the idea that by regulating the manufacture of gasoline, one could control crude flowing to the refineries as well as control prices and the entire oil business. Ickes concurred in the plan, in writing, and special boards of oil men were set up to see that gasoline production at refineries was held down to their ideas of what would reduce stocks, raise prices and "stabilize" the industry. In a few months time in the winter and spring of 1935 this procedure accomplished wonders. Refinery prices went up as large companies, deprived of the right to make enough gasoline for their bare needs at their own plants, had to go into the market and buy from others. The price objective set in the code was at last thus achieved. Incidentally, this was part of the story that the New Deal would not let be told the jury in the Madison case.

Under this proposed Roosevelt-Ickes oil control law it would appear to be easily possible for this single oil "conservation" commissioner in Ickes' office and responsible to no one but the Secretary of the Interior to—

1—Set up his own ideas of standards of "conservation", such as more stringent "gas-oil ratios", shutting down or shutting back the flow of wells to meet the oil commissioner's own ideas of "conservation"; reducing "excessive" production of gas, and,

2—This "conservation" commissioner, so-called, is charged with the task of writing his own interpretation and regulations to prevent, "Physical Waste" which the bill defines as "Physical waste of crude oil shall be deemed to include the loss or destruction of crude oil after recovery thereof such as to prevent its application to useful purposes—" And

3—This Commissioner is also instructed in promulgating his regulations to consider, and "make proper provision concerning, among others, the following factors of waste": of which "loss by evaporation", the "existence or creation of fire hazards" and, in another section "conditions of storage of crude oil recovered" as well as "other characteristics."

To make sure that this "conservation" commissioner does not miss anything on which he might hang a regulation, he is given blanket authorization to investigate every single activity of every one in the oil industry, all the way from the well to the gasoline pump. He can "experiment, investigate or demonstrate" in regard to anything and everything in the industry that he may set his mind to, with plenty of power, seemingly, to make every one step up to his office with the information. In this blanket investigating section are specifically mentioned "uses of oil" and "refining, storage, transportation and distribution of oil and its products."

Commissioner would Control Flow of Crude to Refineries

Such a "conservation" commission would therefore seem to have plenty of authority not only to regulate the flow of crude oil from individual wells, then from each field TO THE REFINERIES but he also would have the power to regulate not only the manner of storing crude oil but the volume of that storage. Right there he could easily require that only fresh crude be run to refineries, and even specific refineries, as he, with his hand on the "conservation" valve stem of the wells and individual fields, dictated.

But more potent, it would seem, than all these more particular specifications of this commissioner's powers, is just what an ambitious public official, in a strongly minded bureaucratic government, that has gone on record many times on behalf of the great power of the federal government, would do with the "powers" that seem to lie in the definition of "physical waste" which the draft says shall "include the loss or destruction of crude oil after recovery thereof such as to prevent its application to useful purposes."

The nub of this main provision of the proposed bill would seem to lie in what are "useful purposes". This the "conservation" commissioner would determine in his own way, perhaps confident that his determination might get before some of the New Deal's hand picked "sympathetic" judges for final interpretation.

To make doubly sure that crude was put to only "useful purposes" it would seem that the "conservation" commissioner has authority to stop its "loss or destruction" which would seem to cover the refining of crude for products and pur-

poses other than those approved by government.

That the New Deal may have in mind controlling the "uses of oil" might be considered as also indicated by a paragraph in the section specifying the minimum that the "conservation" commissioner must consider as "factors of waste." One of these factors is

"The excessive production of natural gas alone or in conjunction with crude oil . . . **even though such natural gas is used or transported for use in the generation of light, heat or power or for other purposes."**

The "conservation" commissioner will alone and from his own infinite wisdom decide what is "excessive production" of gas. He is not only to decide that question in relation to all the usual engineering factors of oil production, but he is specifically enjoined not to let any of these accepted "useful purposes" limit his judgment. And in another section he has to decide what "useful purposes" are.

In view of the fact that in Ex-Oil Administrator Ickes' present department is a bureau charged with the complete regulation as to production, price and everything else of the coal business, and in view of the Ickes' Department's kind words for the coal boys, via their radio broadcast, in view of the New Deal's well known sympathy for "C.I.O." Lewis, head of the coal miners union, and in the light of these folks' many unsuccessful attacks on the oil and natural gas industry, it would seem to be only fair to interpret these quite specific words as being intended to give this "conservation" commissioner full power to so regulate the uses of oil and gas, as among other things, to put the coal industry on top. In short natural gas consumption in our large cities would be reduced so as to force a profitable market for coal. Ditto for fuel oil also.

Official would Determine 'Useful Purposes' For Oil

So if the New Deal plans to decide what are "useful purposes" for petroleum and its products, as one would seem well warranted to believe, the door is thrown wide open to all kinds of regulations as to what kind of products shall be made, how they may be made, how handled and distributed, because there must be no "waste", or "evaporation" or "fire hazard", as well directions as to how it shall be used.

It will hardly become a New Dealer to say that this is putting an extreme interpretation on the proposed law, for New Dealers, of all people, are in no position to protest generous interpretations that lead to more power for centralized government. Their whole record these last six years, in Washington and in courts of law, has been one of getting the most out of every statute and every bit of evidence that would give more power to themselves at Washington. An essential of this proposed law is also to override the states in all things pertaining to conservation, with the power from Washington bureaucracy.

In the light of the New Deal's often expressed aims and in the very wording of this bill, it is only fair to submit to the oil industry that the foregoing is but an exact, precise and most reasonable reading of the powers sought by this bill.

If these words do not mean to create and give these powers to a tool of the Secretary of the Interior then what do they mean? Why were they used?

There are many other phrases and powers and thoughts in this bill that should be explored as to what they mean and where they may carry this country but for the moment we need look at only these propositions.

1—That the federal government would undertake to determine and limit the products of crude oil and natural gas to "useful purposes"

2—That the federal government will write its own definition of "conservation" and of what is "physical waste" all along the line from the well to the final consumer, and

3—That this federal government would be given much new power to enforce its ideas not only against an oil man who has violated any of its rules but—in the language of the bill—against that oil man who "resists, impedes . . . or interferes . . . with the DUTIES" of this Commissioner and his employes (whatever "duties" are) and against any oil man who "is about to violate" or who "shall appear to the commissioner" as "about to engage in any acts or practices which constitute or WILL constitute" a violation.

Is there anything in Germany or Russia today that seeks to give more complete and arbitrary power over human beings than this?

How this "conservation" commissioner is going to back up in a court of law—for the bill does admit that he can be taken there with limitations and conditions—this mind reading of his, the bill does not say except that his "finding of facts" are to be accepted by the courts. But the bill does say that the "conservation" commissioner as long as he wants to indulge in this mind reading and regardless of whether the "mental telepathy" is from what he ate or drank the night before, he can hale oil men before him without end, issue orders against them and then, if they don't obey, he can file countless suits against them, a suit for every day of an alleged violation of his supreme order, and without putting up a thin dime for a bond, to compensate his victims in case he has done them harm and damage.

And, we would remind all of our readers, that there is no limitation in the bill against this "conservation" commissioner exercising his powers of second sight and "reading" the minds of every single refiner, marketer and service station owner and deciding that all such individuals "are about to violate" or are "about to engage in acts or practices which (in the opinion of this government mind reader) *will* constitute" a violation.

Certainly, it would appear, that this must be the product of the mind and hand of the Communistic high powers way off in Russia? We have never spent much time looking under our bed for any Communistic scum, but we can't help but wonder whose hand beat this one out on the typewriter?

And all this is happening today, in these United States of what at least once was a free America, and it is being investigated this week by your representatives down at Washington.

High Court Rules on Depletion

WASHINGTON—U. S. Supreme Court upheld the Treasury Department's ruling that development costs of oil production companies, when charged off as current expenses at the time they are incurred, could not be treated as capital items in subsequent years so as to permit a larger depletion allowance.

Texas Gulf Refiners Buy Louisiana Crude

TULSA, Nov. 6.—Three Texas Gulf Coast refiners are reported to be operating their plants at least partially on Louisiana crude because, they say, they are unable to obtain sufficient Texas crude. It was about this situation that Texas Railroad Commissioner Sadler went to Washington, seeking an increase in Bureau of Mines estimated demand for Texas crude (See page 30).

Sadler's mission brought criticism from producers in other Mid-Continent states that Texas was trying to get a bigger slice of the nation's market. They said that the Texas commissioners hesitated to hike the state allowable without some justification, adding that this was the purpose behind Sadler's trip to Washington.

"There's no actual acute shortage of oil in Texas," one producer-purchaser said. "Some refiners have less crude in storage than they prefer, but they want to supply that deficiency by selective purchases of crude suitable to their needs." Big question at present is whether the state's overall allowable is sufficient to cover demand for Texas crude, another commentator said. If so, then the problem confronting the Commission is to distribute that total allowable equitably among districts so as to preclude a shortage in any one district. "It's a tough assignment, but it's one the Commission will have to face sooner or later, especially if the war focuses demand on fields close to tidewater," it was said.

"Sadler should have Hitler call off his subs," wisecracked one observer, "then we'd have an actual increase in demand and all the Commission would have to do is hike allowables."

Several pointed out that a "tight market is what we've been striving for all this time. Why upset this favorable position by unwarranted increases in production?"

Cole and Phillips on A.P.I. Program

N. P. N. News Bureau

NEW YORK, Nov. 6.—Rep. William P. Cole, Jr., of Maryland and Gov. Leon G. Phillips of Oklahoma, who discussed federal oil control legislation before the Dallas meeting of the Independent Petroleum Ass'n. of America will be guest speakers at the 20th annual meeting of the American Petroleum Institute in Chicago, Nov. 13 to 17.

OIL TAX NEWS

TAXES are so important to ALL oil men, especially taxes levied directly on the oil industry and its products, that N. P. N. each week will devote these columns to news on the subject. Association secretaries, tax committees, other groups and oil men generally are invited to send in news items about taxes—tax proposals, meetings, resolutions, tax bill hearings, rulings, etc. Address Oil Tax News Editor, National Petroleum News, Cleveland, O.

Program for Tax Revision Recommended to Treasury

N. P. N. News Bureau

WASHINGTON, Nov. 6.—Rep. Jere Cooper's tax revision subcommittee of the Ways and Means Committee meets this week with Treasury officials who have been carrying on conferences with respect to proposed changes in the federal tax structure for some months.

During this period the Treasury Department has conferred with representatives of business and industry, including at least two representatives of the oil industry. The oil industry spokesmen, representing chiefly producers, were Russell B. Brown, general counsel of the Independent Petroleum Ass'n. of America, and J. C. Hunter, president of the general Mid-Continent Oil and Gas Ass'n.

Both of these urged against any change in the depletion allowance now granted oil producers in computing their taxable income for income tax purposes, as well as any downward revision in the oil import excise tax.

A comprehensive plan of tax revision was offered the Treasury experts by the National Ass'n. of Manufacturers, which urged:

Nine-Point Program Urged

1. A material reduction in surtax rates in order to stimulate the flow of private capital into productive industry.

2. Abolition or substantial changes in the capital gains taxes affecting individuals, which would stimulate investment of private funds.

3. Exemption of corporate dividends paid to individuals from normal income tax, since this involves double taxation.

4. Elimination of the taxation of intercorporate dividends, for the same reason.

5. Elimination of the ban on consolidated returns.

6. A five year net loss carry-over, instead of the prevailing two year period.

7. Abolition of the combined federal excess profits and capital stock taxes.

8. Equal treatment of the first $25,000 of corporate net income (under the present law, corporations with incomes less than $25,000 are taxed at a lower rate than the first $25,000 income of larger corporations).

9. Extension of date for filing income tax returns from the 15th day of the third month following close of taxable year to 15th day of fourth month following.

Virginia P.I.C. Meets At Roanoke, Nov. 14

RICHMOND, Va. — Oil men in southwestern Virginia are invited to a group session of county petroleum industries committees meeting on Tuesday, Nov. 14, at Hotel Roanoke, Roanoke, Va. S. Gilmer Sparger, secretary of the North Carolina Petroleum Industries Committee group, will make the main address, outlining the best way for oil men to defend themselves against unfavorable legislation. Meeting will start with a luncheon at one o'clock and will last about two hours, according to E. A. Kyhn, secretary, of Virginia Petroleum Industries Committee.

Similar meetings were slated for Nov. 8 at Richmond, and Nov. 9 at Hotel Nansemond, Ocean View, Va.

Gas' Taxes Will Top Billion-Dollar Mark

N. P. N. News Bureau

NEW YORK, Nov. 6. — The billion-dollar mark in gasoline tax collections, closely approached in 1937 and 1938, will be topped this year, if present rate continues, as is anticipated, according to American Petroleum Industries Committee.

Gasoline tax receipts by states up to July 1 were running six per cent ahead of the first six months of 1938. At this rate, state "gas" taxes in 1938 will cost motorists about $815,000,000 as against last year's $766,853,000, the A.P.I.C. points out.

Collections of the federal gasoline tax for the first nine months ran 11 per cent ahead of last year which, if maintained, would bring in $220,000,000, making the total "take" for gasoline taxes $1,035,000,000.

State Fuel Oil Tax Voided

LOS ANGELES—The Washington state fuel oil tax of 0.25 cent per gallon was declared unconstitutional by Superior Judge D. F. Wright at Olympia on Oct. 19, California Oil & Gas Ass'n. reports. State attorney general says he will appeal to Washington supreme court.

October Tax Receipts Rise 7%

ATLANTA—Georgia gasoline tax collections totaled $1,815,796 in October, more than 7 per cent above collections in October last year. The Georgia tax is 6-cents.

Talking Points against Oil Tax Burdens Emphasized by Pictures

This exhibit of posters showing graphically some of the oil man's arguments against automotive taxes was shown at the annual convention Oct. 27 at Denver of the Colorado Petroleum Industries Committee, of which George Douglas is secretary. Four hundred oil men from all over the state attended

Fuel and Lube Talks Feature S.A.E. Meet

By N.P.N. Staff Writer

TULSA, Nov. 3.—Considerable data of current interest to oil marketers generally was sprinkled throughout the otherwise highly technical program of the two-day national fuels and lubricants meeting of the Society of Automotive Engineers here Nov. 2 and 3.

The data was contained particularly in the papers on vapor characteristics of current winter motor fuels, hypoid lubricants, automotive maintenance cleaning operations and the multi-fuel engine that can follow the fuel trends.

Other subjects discussed were tractor fuels, power applications for movement of earth, metal cutting tests, military automotive equipment and the present trend in design and size of military aviation equipment.

Vaporization Discussed

The paper on vaporization characteristics of current winter motor fuels was prepared by R. C. Alden, H. M. Trimble and M. G. Blair of the Phillips Petroleum Co., Bartlesville, Okla.

In discussing the subject the authors stated that "The basic property of any fuel is its calorific value. Other important characteristics of hydrocarbon motor fuels are antiknock properties, volatility and purity. In recent years most attention has been given to the antiknock characteristics in spite of the fact that there is considerable literature to demonstrate that increased volatility could be used to as great advantage as can antiknock characteristics."

The point also was stressed that it has been commonly observed that the improvement in antiknock properties of motor fuels has been attended by a pronounced increase in the overall volatility and "that there are many indications that the design of automotive fuel induction systems has not kept pace with nor taken full advantage of this intrinsically valuable change."

In addition to the increase in average volatility of motor fuel, it was stated, there also has been a decided tendency on the part of motor fuel manufacturers toward pronounced seasonal volatility characteristics. This development, it was pointed out originated in the middlewestern states and now has reached a high degree of perfection in that area. "It is estimated," the authors stated, "that in some states as much as 40 per cent of the winter gasoline sales volume is in the category of extremely volatile fuels."

Vapor pressure has come in for too much emphasis in a discussion of volatility of motor fuels, the authors said.

"Vapor pressure, as a volatility characteristic," he stated, "is of very limited significance. In the present discussion we are concerned with those more important volatility characteristics which are determined by the complete or almost complete vaporization of the gasoline in air-fuel mixtures."

Conclusions Stated

After describing a series of tests the authors drew the conclusions that:

The average winter gasoline of 1928 had greatly improved over the average winter gasoline of 1919, as far as low temperature vaporization characteristics are concerned; also that the average winter grade for 1938 was further improved in low temperature vaporization characteristics, but was more pronouncedly improved in high temperature vaporization characteristics.

That the average 1938 winter gasoline will furnish an operable air vapor mixture at a vaporization temperature of zero if the supplied air fuel ratio is anywhere between 1:1 and 5.4:1.

The vaporization characteristics, in general, of modern winter gasolines are such that, except at extremely low vaporization temperatures, only a very moderate choking is necessary to attain operable air vapor mixtures.

Hypoid Lubricant Paper

Dr. C. F. Prutton and A. O. Willey of the Lubri-Zol Corp., Cleveland, presented the paper on hypoid lubricants.

"For satisfactory lubrication of hypoid gears," the authors said, "lubricants must meet many exacting requirements, primary among these being the capacity for prevention of scoring and excessive wear on the contacting gear tooth surfaces over a wide range of operating conditions. In addition to this requirement, the lubricant must be sufficiently stable over long periods of time, so that loss of film strength, thickening, separation, or corrosive or abrasive action do not cause troubles in service."

After discussing the theories of lubrication and the types of hypoid lubricants now manufactured and experiments with them, the authors drew the following summary and conclusions:

1. Present day hypoid lubricants function by chemical reaction which produces a minute amount of solid lubricant at points of excessive pressure.

2. A careful balancing of the chemical activities of the reagents employed is necessary to obtain a lubricant composition which will be satisfactory over a wide range of operating conditions, and long periods of service.

3. Modern hypoid lubricants of the "chemical" type are designed to meet the requirements as to film strength, stability and wear demanded in field service.

Suess and Lowe at S.A.E. Meeting

Two of the men who helped make the S.A.E. Meeting at Tulsa a success were Frank A. Suess, (left) of the Research Department, Continental Oil Co., Ponca City, Okla., who was chairman of one of the sessions, and William F. Lowe, secretary of the Natural Gasoline Ass'n. of America, who was chairman of the local committee

Motor Flushing Improves Compression; 6-Point Maintenance Program Outlined

H. Liggett Gray of the Oakite Products, Inc., in his paper on "Automotive Maintenance Cleaning Operations", outlined in considerable detail the operations necessary in the following work:

Cleaning interiors of engines in regular service.

Cleaning out water jackets and cooling systems.

Cleaning exteriors of engines in regular service.

Cleaning running gear in regular service.

Cleaning engine and chassis parts during overhaul.

Special aviation operations.

He recommended two flushing operations in cleaning the interiors of engines. The first operation, with the flushing solution remaining in the crankcase while the motor is idled for one to two hours, is followed by a second flushing operation with light flushing oil with motor to idle for 10 or 15 minutes.

This dual-flushing operation many times will increase compression considerably, Mr. Gray said. For example, he cited a test on a light passenger car which has traveled 90,000 miles and which had a compression ranging from 50 on the No. 6 cylinder to 80 on the No. 2 and No. 4 cylinders. After the cleaning the compression ranged be-

Talk Over Tulsa S.A.E. Program

B. E. Sibley, head of Continental Oil Co.'s Research Department at Ponca City, Okla.; George Kreiger of the Agricultural Research Department of Ethyl Gasoline Corp., and Ralph Matthews of the Battenfeld Grease and Oil Co., Kansas City, Mo., discuss the S.A.E. program

tween 85 and 90 on the six cylinders.

The speaker also outlined in considerable detail the single and multiple flushing operations for water jackets and radiators.

"An important factor with which the cleaning engineer must contend", Mr. Gray said, "is the problem of electrolytic action of different solutions which come in contact with a number of dissimilar metals in the same cooling system. Practically any solutions suitable for cleaning have somewhat the nature of electrolytes. It is necessary and possible to prevent or control to a very minimum electrolytic attack upon any of the metals. . . . It is possible, however, to provide effective cleaning solutions which for all practical purposes have negligible electrolytic action when in the presence of these dissimilar metals in a cleaning system."

In cleaning the exteriors of engines the speaker recommended the use of steam in connection with cleaning solutions, or the so-called cold cleaning in which the operator saturates the exterior with a solution by using a low pressure spray and then knocking off the saturated accumulation with a water jet operated at high pressure.

Multi-Fuel Engine Described

A detailed description of a comparatively new internal combustion engine that is not at all particular about the kind of fuel it uses was described by P. C. Ritchie of the Waukesha Motor Co.

"The immediate background of this present multi-fuel engine", Mr. Ritchie said, "probably lies not far from this very locality and is based upon the experience here in the Mid-Continent oil fields where the Hesselman spark ignition, oil injection engine was introduced some five or six years ago.

"Shortly after its introduction it suddenly dawned upon a driller who had been using one of the engines, that the higher compression—6 to 1—was just about the same as the ratio employed for the natural gas engine on one of his other drilling rigs. Since with natural gas he had no manifold distribution problem, he argued 'Why not put a gas carburetor on the air intake of the Hesselman engine and run it on natural gas?' He tried it and it worked. . . .

"The most obvious next step was to adapt this 'dual-fuel' engine to burn gasoline, and thus we came to the present multi-fuel engine which burns oil, natural gas, butane, or gasoline with equal facility, and can easily be modified to burn a whole host of other fuels such as mixtures of soybean and fuel oil, alcohol, kerosine, tractor distillates, and even low BTU producer gas."

Air Corps Leader Talks

Brig. Gen. Barton K. Yount, assistant chief of the air corps, U. S. Army, discussed for more than three hours the present trend in design and size of military aircraft. He told the engineers that there is a definite trend toward greater gross weight for each type of military airplane as well as toward greater speeds.

In the field of aerodynamic refinement, the speaker said, present effort is to achieve very smooth surfaces and true contours and to eliminate all gaps and air leakages. He said that increased wing loadings and improved high-lift devices are inevitable with assisted take-offs for certain types being a possibility.

Superchargers also are undergoing intensive development and that fuel in quantity with better than 100 octane rating can be expected soon.

Draws Largest Attendance

Col. A. W. S. Herrington, president of Marmon-Herrington Co., Inc., manufacturers of military automotive equipment including tanks, talked "off the record" of the present situation in Europe. He was in Warsaw only a few days before the Germans moved into that city. He spends much of his time in Europe and his discussion was said to have been highly enlightening to the engineers.

Following the dinner the evening of Nov. 3 a debate was staged between engineering students at Oklahoma university and Kansas State college, department of mechanical engineering. The subject was, Resolved: That V-Type Engines are to be Preferred to In-Line Engines for Passenger Equipment.

The meeting drew the largest attendance of any similar meeting held previously in Tulsa.

Ethyl Sets Up Lead Fuel 'Lab'

NEW YORK, Nov. 3.—Ethyl Gasoline Corp. has established a refinery technology division to aid refiners in meeting problems arising from advances in petroleum chemistry and automotive engineering, according to announcement by Dr. Graham Edgar Ethyl vice-president.

W. H. Hubner

The new division will be headed by William H. Hubner, for the past ten years with Universal Oil Products Co. J. B. Taylor, Jr., of the Ethyl Engineering Laboratories has been named as assistant to Mr. Hubner. The new division will be located in Detroit and will begin operations January 1, 1940.

Developments affecting the behavior of tetraethyl lead in different types of gasolines have created the need for organized technological co-operation with the refining industry, Dr. Edgar explained.

Mr. Hubner, author of numerous papers on motor, aircraft and diesel fuels, began as test engineer for Chevrolet Motors in 1923. The following year he was appointed to a fellowship at the Mellon Institute of Industrial Research. He is secretary of the Chicago section of the Society of Automotive Engineers and a member of the Co-operative Fuel Research Committee.

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Penn Crude Price Up 15c, Bright Stock Price Soars

N. P. N. News Bureau

CLEVELAND, Nov. 6.—A 15-cent advance in prices for Pennsylvania grade crudes was posted Nov. 1, according to announcements from the three leading purchasers, Tide Water Associated Oil Co., The Pennzoil Co., and Joseph Seep Purchasing Agency.

This was the second advance in Pennsylvania crudes in less than a month, prices having been marked up 25 cents a barrel on Oct. 6. It carried prices to nearly 100 per cent above the depression lows of 1933 for the higher priced grades, and to more than 100 per cent above the 1933 depression lows for the cheaper grades. (See accompanying table for comparison of prices.)

Since early October of this year, when crude prices were advanced 25 cents a barrel, refinery runs of Pennsylvania crude have held close to 80,000 barrels daily, as compared with daily average runs of approximately 75,000 barrels in the first nine months of 1939. This despite the fact that one large refiner (Standard Oil Co. of New Jersey) discontinued running Pennsylvania crude at its Eagle Plant works in New Jersey in August.

Pennsylvania crude stocks as reported by the Bureau of Mines dropped approximately 250,000 barrels, or 5 per cent, during the period between the two recent price advances, Oct. 6 to Nov. 1.

Refiners in western Pennsylvania generally had been expecting an increase in their crude costs, according to reports from the field, but comments as to the possible effect on refined products prices varied. One refiner reported a 3-cent-per-gallon increase in his bright stock prices and another refiner said he had advanced his quotations for certain grades of lubricating oil 1 to 2 cents a gallon. Both advances were by refiners who had been on the high side of the market.

Bright Stock Sale at 36c

Sale of 200,000 gallons of a special grade of bright stock was said to have been made recently at 36 cents a gallon, while quotations reported by refiners for ordinary 25 pour test, No. 8 color bright stock ranged from 24.50 to 33 cents.

"Fifteen cents more for crude at this time is economically unsound, just as 36 cents for bright stock is economically unsound," one refiner said in commenting on the crude price advance.

"The advance in crude will undoubtedly help in raising some of the low prices for lubricating oils," another refiner said, but he added that "it will not help the contracts with maximum price clauses."

The prices in some bright stock contracts are reported to be as low as 18 cents a gallon as compared with current refiners' quotations of 24.50 to 33 cents.

Pennsylvania Crude Prices

	Prices Posted Nov. 1, 1939	1933 Depression Lows
Bradford-Allegheny	$2.40	$1.27
National Transit	2.28	1.22
Southwest Penna	2.05	0.97
Eureka	1.99	0.92

Venezuela Gets 50% Reduction In Oil 'Tariff'

(*Continued from page* 17)

other hand, this country produces slightly over 60 per cent of the total world output notwithstanding the fact that the principal domestic fields are being operated under restrictions in order to avoid wasteful production.

"Fuel oil (in one or more grades) is obtained from nearly all grades of crude petroleum and is produced in most refineries. Venezuelan crude is much heavier than the average domestic crude and yields principally heavy fuel oil and asphalt. Domestic crudes yield larger percentages of gasoline and kerosine, and superior grades of lubricating oil, the more valuable petroleum products. Fuel oil from domestic crudes consists chiefly of grades much lighter than imported fuel oil or fuel oil produced in this country from imported crude. The domestic demand for all grades of fuel oil, including both the heavy grades for ships' bunkers and industrial plants and the lighter grades for diesel engines and residential heating, has been increasing. Production in the United States of heavy fuel oil from low-grade foreign crude and the importation of heavy fuel oil tend to reserve the high-grade domestic crudes for the production of the more valuable petroleum derivatives.

"The United States leads the world in the production and consumption of the petroleum products. This country is also important both as an importer and an exporter of crude petroleum and petroleum products. The domestic industry has been on an export basis for many years. In 1938, imports of crude petroleum amounted to 26,048,000 barrels, as compared with exports of 77,272,000 barrels. Imports in that year of fuel oil of all grades (including tax-free entries for use in ships' bunkers) amounted to 26,165,000 barrels (two-thirds of this came in free), as compared with exports of 43,832,000 barrels.

"Venezuela is the most important supplier of United States imports of crude petroleum, accounting for 85 per cent of the total in 1937 and 90 per cent in 1938. Imports of fuel oil are supplied almost entirely by the Netherlands West Indies, but most of the fuel oil refined (there) . . . is produced from Venezuelan crude."

Imported $14,965,000 Worth

On the other hand, the State department pointed out, the petroleum industry is "the principal factor in the economic life of Venezuela," accounting for about 90 per cent of its exports

Petroleum imports into this country in 1938 from Venezuela amounted to $14,965,000, the Department said.

Only two other items imported by this country from Venezuela were accorded a reduction in duty by the agreement — ground barbasco root and tonka beans—both described by the State Department as "typical products of the tropical or semi-tropical zones and . . . not produced in the United States."

Importation of crude and fuel oil for ships' bunkers, and in bond for re-export, were bound on the free list by the treaty, which is subject to approval by ratification by the Venezuelan government, but will become provisionally effective Dec. 16.

Nebraska Gets Producing Well

TULSA, Nov. 6.—Completion of an oil well in Nebraska—in the Forest City Basin—and the U. S. appellate court's decision on the Rowan & Nichols Oil Co.'s case highlighted the crude situation in the southwestern producing area the past week.

The Nebraska well, first producer in that state, was brought in by the Pawnee Royalty Co. near Falls City, Neb., in Richardson county. Just how good is the well had not been made known but reports from that area stated the oil was "slopping" over the casinghead when shut in for tankage. Oil was reported to be of 30 degrees gravity.

The well definitely revises interest in the Forest City basin, which several months ago experienced one of the most intensive leasing plays in the industry's history. Approximately 3,000,000 acres in the Basin area of southeastern Nebraska, southwestern Iowa, northeastern Kansas and northwestern Missouri were placed under lease without any material show of oil having been found.

The Rowan & Nichols case is expected to cause a decided change in the method of prorating the East Texas field. The U. S. appellate court at New Orleans the past week upheld a lower court decision which had ruled that the proration system that had been used for several years in that field was arbitrary and discriminatory.

The Texas railroad commission has announced it will appeal to the U. S. supreme court. Unless that court finds something questionable in the issues and agrees to review the case, the commission undoubtedly will be faced with an enormous task of making far-reaching changes which may affect all Texas producing properties.

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Raise Texas 'Demand' Sadler Urges Bureau

N. P. N. News Bureau

WASHINGTON, Nov. 6.—G. A. (Jerry) Sadler, Texas Railroad Commission member who came to Washington to see if he couldn't get the Bureau of Mines' demand figures for Texas increased to take care of an anticipated increase in demand brought on by the European war, told NATIONAL PETROLEUM NEWS that many independent refiners in Texas are already going begging for oil because of the close proration.

G. A. Sadler

Commissioner Sadler said he sought to have the November allowable raised from 1,444,000 barrels daily to 1,844,000 barrels daily, but that he got little satisfaction from the Bureau of Mines.

The Texas commissioner said that in his opinion "there will be a greatly increased demand for crude oil" now that the neutrality law is in effect, although there will be something of a problem to find ships to transport it, he added.

About 28 per cent of the tankers afloat today, he said, fly the American flag, and these ships will not be available for carrying American oil to warring countries, he pointed out. But many vessels belonging to American countries are registered under foreign flags.

Stocks of gasoline are increasing rapidly, Sadler pointed out (adding that President Roosevelt, to whom he had talked earlier, was aware of the increase). The increase, he believes, is due to a speculative situation in which speculators are doing the stock-pile building.

If, then, the war should be brought to a sudden, unexpected close, the unduly large stocks of gasoline would be left to flood the domestic market—how far they would drive prices downward no one knows.

Much of these stocks are being accumulated along the eastern seaboard, Mr. Sadler said, adding that a great deal of crude is even now being shipped from Gulf ports to the Atlantic coast for refining, which is the reason for a shortage of supply among some Texas refiners.

'400,000 Barrels More a Day'

"Unless we can produce about 400,000 barrels a day more of crude, or are able to get it from other states," Mr. Sadler said, "some of the Texas refineries will be forced to close down."

Mr. Sadler said his commission is studying the new neutrality law, but that any final determination of a course of action will, of course, depend on the White House proclamation, or proclamations under it.

Exports are already large, he said, and these, together with the heavy movement of crude from Gulf ports to the East Coast for refining, and stocking, are curtailing supplies of Texas refiners.

The Texan pointed out that the 400,000-barrel increase he sought for Texas would only amount to several tankers a day.

Mr. Sadler, who was accompanied to Washington by Chairman Lon Smith of the Texas commission, said he had no definite figures of oil moving from Gulf to foreign ports, or the exact destinations, since shippers in export are not required to report to the Texas commission. Both Mr. Sadler and Mr. Smith said they believed the daily shortage which they asked be made up (400,000 barrels) would approximate the outmovement.

While in Washington, Mr. Sadler called at the White House, but said afterward that his talk with the President had been chiefly political.

He said he had talked with a number of officials here on plans for "keeping the way open in Texas for the re-election of Mr. Roosevelt."

He said there was some talk at the White House about shortage of tankers available for export trade after the neutrality act becomes effective.

Mr. Sadler, on leaving Washington, said he planned to return for the Cole committee hearings on the administration's oil bill.

No Increase in Sight Says Bureau of Mines

N. P. N. News Bureau

WASHINGTON, Nov. 6. — There will be no increase in the Bureau of Mines' November estimate of demand for Texas crude oil, as sought by Texas Railroad Commissioners Lon Smith and G. A. (Jerry) Sadler on a special trip to Washington, and any increase in the December estimate (not yet made) will await developments, it was indicated at the Bureau of Mines following the Texans' visit.

The Bureau, it is understood, along with other departments of the government, has noted but small gain in actual export demand for U. S. oil and products because of the European war, now two months old. Many U. S. refiners, on the other hand, are overrunning their stills (in the Bureau's opinion), thus taking up crude oil to make gasoline for which, as yet, there is no apparent demand.

As a result, early reports to the Bureau indicate that gasoline stocks will increase about 2,000,000 barrels during October, instead of the decrease of 1,000,000 barrels forecast by the Bureau. According to Mr. Sadler, a large volume of these gasoline stocks are being accumulated by speculators in storage at Atlantic Coast ports. At the same time, he told the Bureau, many Texas refiners are finding it difficult to get supplies of crude.

The Mines Bureau, it was pointed out, only estimates actual demand for the crude and products from each state. When it foresees no increase in actual demand, the monthly figures which it releases are held down around the going level. Since the crude from Texas is going into what the Bureau considers excessive refinery runs, and much of the products made from it is going into storage, the indication is that there is no actual demand, the Bureau is understood to have told the Texans.

Shutdown Cited

Further, the Bureau explained, the two week shutdown in August was one of the real reasons for a crude shortage now, since it reduced crude stocks to a "minimum." The "excessive" crude runs now being charged to stills has aggravated this crude stock shortage, it was pointed out. Adjustment of crude production quotas to supply the state's refineries, the Texans were said to have been told, was at matter for the state to undertake.

Other government departments here concur in the Bureau's finding that as yet there has been no indication of a large upturn in export demand due to the war. While some enlarged movement of exports has been reported during the past few weeks (no figures are as yet available), the demand which was expected in some quarters has failed to materialize.

There have been some large lubricating oil movements, and, with the neutrality bill now settled, it is expected that purchases of other products for export may increase in the next few weeks, although the question of tankers arises where shipments to Europe are concerned.

May Change Tanker Registry

However, the large number of American-owned, foreign registered tankers, along with the tankers which may be allowed to change their registry as a result of the cash-carry law, may be ample to take care of the export business to European countries.

U. S. Maritime Commission attaches pointed out today that already the commission has granted permission for five or six tankers to change from American to other registry — most of them Standard Oil of New Jersey boats, it was said.

Institute of Petroleum to Meet

CHICAGO—Annual dinner of the Institute of Petroleum will be held during the American Petroleum Institute meeting in Chicago at Stevens Hotel, 6 P.M., Wednesday, Nov. 15, with Dr. Graham Edgar, vice-president of Ethyl Gasoline Corp., as speaker. Early reservations by those expecting to attend are requested by W. B. Ross, of The Pure Oil Co., Chicago, who is handling the arrangements.

Refining Areas Supplying Middle West Have 'Best' Position on Gasoline Stocks

N. P. N. News Bureau

CLEVELAND, Nov. 6.—The gasoline stocks position of refiners in districts normally supplying the midwestern consuming area is in better shape than other districts, according to Leo J. Wilmeth, sales manager for Hurricane Oil Sales Corp., Shreveport, La.

Mr. Wilmeth, in two letters to NATIONAL PETROLEUM NEWS, decries the tendency to judge the statistical position of any refining district by fluctuations in gasoline stocks figures for the entire country. He prepared two tables to illustrate his point.

Following are Mr. Wilmeth's letters to NPN:

"Some several months ago I addressed a letter to you about publicity, which was then and is still being given in about the same form, on weekly gasoline stocks as reported. I felt then, and I still feel that if these stocks were given a little bit more detailed publicity, it would present better grounds for the independent refiner serving the Middle West with gasoline and the jobber buying in the same territory, to arrive at a better program for their sales or purchases from a statistical standpoint.

"These stocks are reported covering ten various territories, four of these territories clarified as follows: Indiana, Illinois, Kentucky; Oklahoma, Kansas and Missouri; Inland Texas and North Louisiana, Arkansas, ship to trade in the Mid-Continent Field and the Middle West direct, but the other six territories do not. Some of them finally get gasoline into the marketing area mentioned above, but it is by some means other than that regularly taken by independent refiners.

"Attached are two schedules which I have worked out. On the first sheet (Table No. 1), you will notice I have set up reported stocks and stock fluctuation for three periods. The first period would be the change in the stocks for a year's period, namely October 22, 1938 to October 21, 1939. For this year's period, that shows stocks increased 2,917,000 barrels. Then the next change is for the week of October 14, October 21st, an increase in reported stocks of 809,000 barrels. Then the next period is from June 3, 1939 to October 21, 1939, a decrease of 11,555,000 barrels.

"On the second sheet (Table No. 2), there is a recap of stock fluctuations only. The only column on which I wish to make comment is the second column, namely, stock fluctuations for the week of October 14-21st. For the ten reported areas, there was an increase in stocks of 809,000 barrels. But, for those four territories shipping to the Middle West, there was only an increase of 42,000 barrels, which is negligible considering the amount of gasoline shipped from these four territories. And from the outlying six other territories there was an increase of 767,000 barrels. Now as a comparison, you might refer to the third column which is nothing but decreases for all ten territories from June 3rd to October 21st, and notice that of the 11,555,000 barrel decrease for this period, that over four and one-half million of it, or nearly half, is a decrease in the four territories serving the Middle West. This brings me to the point of this letter. Wouldn't it be better for all concerned if instead of saying for the last week that stocks increased 809,000 barrels and letting it go at that, to say that the stocks increased so much per territory or decreased, whichever it might be, and then giving some kind of a sub-total covering these supply centers; and in the end then a grand total of the increase.

"We all know that in our minds there always comes up the question of supply and demand, and in this instance in the mind of the buyer wishing to purchase a quantity of gasoline for shipment to his stations, say in Minnesota, he would figure that the supply had jumped up 800,000 barrels, whereas it had only increased some 40,000 barrels. So his supply would be much less actually than he would be led to believe by just referring to the caption disclosing changes in stocks.

"I would appreciate your looking into this matter from the standpoint that I have attempted to give you and see if you do not think that some change could be made along these lines."

Second Letter

"Supplementing my letter of November 1st regarding reported stocks of finished and unfinished gasoline, in this letter I neglected to refer to one point, and that is that in making any comment about total stocks in the United States, reference is made to estimated stocks by Bureau of Mines and not to reported stocks, which we must assume would be correct as furnished by A. P. I. And there is a difference on the heavy side of some five million barrels of gasoline. This in itself, does not present a satisfactory statistical position. When we talk about estimated stocks in one figure and then refer to reported stocks in another which is considerably less.

"Another thought in reference to mine of yesterday is that of those four territories supplying the Middle West direct with their gasolines for the year October 22, 1938, to October 21, 1939, there was a net increase in storage in these four territories of 531,000 barrels. And by referring to figures, you will find that territory headed Indiana, Illinois, Kentucky, increased 604,000 barrels alone.

"I have before me today Platt's Oilgram of October 30th, which covers reported stocks for week ending October 28th. Reference is made to total stock increase under caption 'Refinery Crude Runs Cut 130,000 Barrels.' Reference is made here again to the estimated U. S. Gasoline Stocks of 72,662,000 barrels, whereas actual reported gasoline stocks are 67,560,000 barrels. Now, a breakdown of this stock fluctuation for the week October 21st-28th is as follows:

East Coast, increase	84,000
Appalachian, decrease	95,000
Texas Gulf, increase	248,000
La. Gulf, increase	115,000
Rocky Mountains, decrease	11,000
California, increase	342,000
Total, increase	683,000
Ill., Ind., Ky., decrease	175,000
Okla., Kans., Mo., increase	107,000
Inland Texas, decrease	62,000
No. La., Ark., decrease	65,000
Total, decrease	195,000
Net change, increase	488,000

"You will notice by referring to these figures that the four territories which I am so vitally interested in from a statistical

NPN Would Like YOUR Views

NPN would like to hear from other readers commenting on Mr. Wilmeth's views herein set forth or on the general question of statistics as a barometer of the oil industry's "health." Address, The Editor, National Petroleum News, Cleveland, O.

Table No. 2

Change in Stock Position by Territories as Listed below in Thousands of Barrels

	10/22/38 to 10/21/39	Week 10/14/39 to 10/21/39	Period 6/3/39 to 10/21/39
East Coast	+ 787	— 38	— 3,503
Appalachian	— 75	+ 236	— 842
Texas Gulf	— 511	+ 346	— 665
Louisiana Gulf	+ 483	+ 70	— 73
Rocky Mountains	— 58	— 20	— 740
California	+1,760	+ 173	— 1,174
Net Change	+2,386	+ 767	— 6,997
Ind.-Ill.-Ky.	+ 604	— 115	— 2,783
Okla.-Kans.-Mo.	+ 16	+ 163	— 1,634
Inland Texas	— 52	+ 60	— 19
No. La.-Arkansas	— 37	— 66	— 122
Net Change	+ 531	+ 42	— 4,558
Total Net Change	+2,917	+ 809	—11,555

+ Indicates increase.
— Indicates decrease.

Table No. 1

Reported Stocks of Finished and Unfinished Gasoline in Thousands of Barrels

	East Coast	Appalachian	Ind. Ill. Ky.	Okla. Kans. Mo.	Inland Texas	Texas Gulf	La. Gulf	No. La. Ark.	Rocky Mts.	Calif.	Total
Stocks—10/22/38	17,640	2,781	10,342	6,006	1,609	9,802	1,956	426	1,060	12,533	64,155
Stocks—10/21/39	18,427	2,706	10,946	6,022	1,557	9,291	2,439	389	1,002	14,293	67,072
Stocks—10/14/39	18,465	2,470	11,061	5,859	1,497	8,945	2,369	455	1,022	14,120	66,263
Change in stocks 10/22/38 to 10/21/39	+787	—75	+604	+16	—52	—511	+483	—37	—58	+1,760	+2,917
Change in stocks 10/14/39 to 10/21/39	—38	+236	—115	+163	+60	+346	+70	—66	—20	+173	+809
Stock 6/3/39	21,930	3,548	13,729	7,656	1,576	9,956	2,512	511	1,742	15,467	78,627
Change in stocks 6/3/39 to 10/21/39	—3,503	—842	—2,783	—1,634	—19	—665	—73	—122	—740	—1,174	—11,555

+ Indicates increase. — Indicates decrease.

No A.P.I. Refinery Figures

Because of Election Day holiday in New York on Nov. 7, the A.P.I. weekly report on refinery operations was not available for this issue, but will be published next week, along with figures for the week ending Nov. 11.

standpoint, actually went down 195,000 barrels of Gasoline last week, while the outlying six territories went up 683,000 barrels.

"Now, these two figures are another reason why I feel more publicity should be given to these stock positions in detail. The Refiners in the Mid-Continent Field are not in the position statistically that total stock fluctuations in reported gasoline as a total each week indicates. Consequently, the statistics from the gasoline standpoint point to a stable market at a livable price when considering only those territories finished in the Middle West direct, whereas the greater percentage of the minds, both buying and selling, are impressed only with the increase or decrease of the country as a whole."

Crude Oil Stocks Gain Over Million Barrels

N. P. N. News Bureau

WASHINGTON, Nov. 6. — Crude stocks of petroleum totaled 230,453,000 barrels on Oct. 28, having gained 1,326,000 barrels during the preceding week, Bureau of Mines reports. Domestic stocks increased 1,430,000 barrels, partially offset by a 104,000-barrel drop in foreign crude.

Stocks by grade or origin, showing changes, will be found in tabular form on this page.

1938 'Gas' Demand Was Record But This Year Will Break It

N. P. N. News Bureau

WASHINGTON, Nov. 6. — Final figures on 1938 oil industry statistics, compiled by U. S. Bureau of Mines, show that, while crude oil production dropped to 1,214,355,000 barrels (5 per cent below the 1937 total of 1,279,160,000 barrels), 1938 demand for motor fuel broke all previous records by a healthy margin.

Up until the fall of 1938 it appeared that the year's total would fall below the previous year, but there was a pickup in the final quarter which brought the 1938 total to 523,003,000 barrels as compared with 519,352,000 barrels.

Indications are that 1939 will set a new record, topping last year by a much wider margin. For eight months, 1939 domestic demand figures were 362,454,000 barrels, a lead of 20,000,000 barrels over the same period in 1938.

Exports of motor fuel increased to 50,109,000 barrels in 1938 or about 30 per cent above 1937. Crude oil exports in 1938 totaled 77,254,000 barrels, compared wtih 67,234,000 barrels in 1937.

In contrast with 1937, when stocks of gasoline increased sharply, a reduction of about 4,000,000 in finished inventories was made in 1938, according to the report, bringing the total to just under 66,000,000 barrels (excluding nearly 6,000,000 barrels of unfinished gasoline) at the end of 1938.

The mild winter and a decline in industrial activity were reflected in the domestic demand for the light fuel oils (including kerosine), which barely surpassed the 1937 totals. At the same time, demand for residuals was down sharply because of the business recession, the Bureau reported.

A tabular comparison of 1938 and 1937 statistics appears on this page.

Supply and Demand of All Oils in 1938, Compared With 1937

(Including wax, coke and asphalt in thousands of barrels)

	1938	1937	First 8 Months 1939	First 8 Months 1938
New Supply:				
Domestic production:				
Crude petroleum	1,214,355	1,279,160	815,193	811,909
Natural gasoline	51,347	49,177	32,425	33,272
Benzol	1,764	2,790	1,414	1,019
Total production	1,267,466	1,331,127	849,032	846,200
Imports:				
Crude petroleum	26,412	27,484	21,452	16,926
Refined products	27,896	29,673	18,238	18,142
Total new supply, all oils	1,321,774	1,388,284	888,722	881,268
Daily average	3,621	3,804	3,657	3,627
Decrease in stocks, all oils	9,077	[1]45,768	32,376	[1]15,273
Demand:				
Total demand	1,330,851	1,342,516	921,098	865,995
Daily average	3,646	3,678	3,791	3,564
Exports:				
Crude petroleum	77,254	67,234	48,222	54,430
Refined products	116,474	105,600	80,034	78,060
Domestic demand:				
Motor fuel	523,003	519,352	362,454	342,687
Kerosine	56,360	54,972	38,208	34,798
Gas oil & distillate fuels	117,449	116,841	82,586	71,080
Residual fuel oils	291,833	325,514	205,998	186,134
Lubricants	21,233	23,323	14,998	13,750
Wax	995	1,062	603	721
Coke	5,589	5,765	4,638	3,485
Asphalt	24,155	21,876	17,131	15,936
Road oil	7,847	7,954	5,914	5,575
Still gas	65,890	64,218	43,883	41,751
Miscellaneous	1,776	2,249	1,506	1,207
Losses	20,993	26,556	14,923	16,381
Total domestic demand	1,137,123	1,169,682	792,842	73[2],505
Daily average	3,115	3,205	3,263	3,019
Stocks:				
Crude petroleum:				
Refinable in U. S.	274,958	[2]305,833	238,479	285,640
Heavy in Calif.	16,467	14,505	14,253	17,575
Natural gasoline	4,830	4,758	6,624	8,022
Refined products	259,665	[2]239,901	262,738	268,022
Total, all oils	555,920	564,997	522,094	579,259

[1] Increase. [2] For comparison with 1938.

Shea Leaves Tide Water To Head Utility Co.

NEW YORK, Nov. 4.—Edward L. Shea has resigned as executive vice-president of Tide Water Associated Oil Co., William F. Humphrey, president, has announced.

Mr. Shea leaves Tide Water after 23 years service to become president of The North American Co., large public utility company. He will continue as a director of Tide Water.

"The office of executive vice-president of Tide Water Associated Oil Co. has been abolished," Mr. Humphrey said. "There will be no change in the policies or methods of operation, which will be carried on by present personnel through the supervision of the existing operating committee."

West Branch (Mich.) Hiked 3c

MT. PLEASANT, Mich.—Effective Nov. 1, Simrall Corp., Standard Oil Co. of Ohio crude purchasing subsidiary in Michigan, advanced West Branch, Mich. crude 3 cents, to new price of $0.85 per barrel. All other grades were unchanged. It added Vernon crude as a new posting to Greendale, Porter, Crystal and Wise, at $1.02.

Weekly Changes in U. S. Crude Oil Stocks*

(Thousands of barrels)

Grade or origin	Oct. 14	Oct. 21	Oct. 28	Chng. from Oct. 21
Pennsylvania Grade	5,122	5,100	5,065	— 35
Other Appalachian	1,355	1,374	1,361	— 13
Lima-Michigan	1,856	1,823	1,909	+ 86
Illinois-Indiana	15,792	15,641‡	16,086	+ 445
Arkansas	2,679	2,508	2,486	— 22
Kansas	5,198	5,223	5,309	+ 86
Louisiana:	10,391	10,312	10,274	— 38
Northern	3,914	3,919	3,932	+ 13
Gulf Coast	6,477	6,393	6,342	— 51
New Mexico	4,825	4,903	5,128	+ 225
Oklahoma	61,170	60,833	60,800	— 33
Texas:	64,832	65,538	66,636	+1,098
East Texas	13,486	13,813	14,213	+ 400
West Texas	13,982	14,310	14,459	+ 149
Gulf Coast	16,381	16,516	17,317	+ 801
Other Texas	20,983	20,899	20,647	— 252
Rocky Mountain	17,756	17,782	17,455	— 327
California	36,643	35,774	35,732	— 42
Foreign	2,251	2,316	2,212	— 104
Total U. S. refinable	229,870	229,127	230,453	+1,326
Heavy in California	13,994	14,035	14,145	+ 110

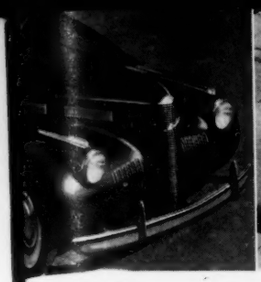
* As compiled by the U. S. Bureau of Mines.
‡ Corrected.

Crude Oil Production for the U. S.

(American Petroleum Institute figures)

	Week Ended Nov. 4 Barrels	Week Ended Oct. 28 Barrels	Week Ended Oct. 21 Barrels
Oklahoma	409,600	415,750	428,000
Kansas	173,250	187,200	174,850
Texas	1,289,350	1,250,900	1,514,600
Louisiana	269,100	264,850	262,200
Arkansas	66,800	65,900	65,350
Mississippi	800	800	350
Illinois	326,350	340,400	327,700
Eastern (Ill. excluded)	102,250	103,100	102,950
Michigan	62,250	63,950	62,450
Wyoming	57,650	62,100	65,000
Montana	17,700	17,200	17,250
Colorado	3,400	3,900	3,700
New Mexico	115,850	115,750	115,800
California	607,600	606,700	631,700
Total U. S.	3,501,350	3,498,500	3,771,900
Crude Imports	49,860	*112,670	107,000
Total New Supply	3,551,210	3,611,170	3,878,900

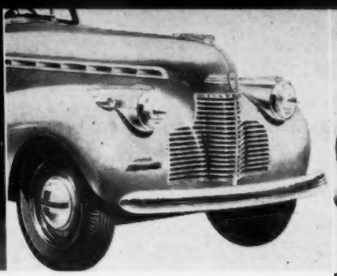
* Revised



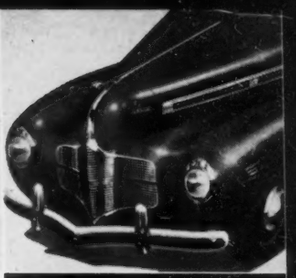
LaSALLE

NASH

CROSLEY



CHEVROLET



DODGE (Cor.)

OLDSMOBILE

THE 1940 AUTOMOBILES

BRING NEW LUBRICATION PROFIT POSSIBILITIES

ON PAGES following, NATIONAL PETROLEUM NEWS presents its Annual Guide of lubricating and servicing features of the 1940 model passenger cars.

It likewise dedicates this issue to the oil marketers and managers of oil marketing companies. These men have under their supervision the car lubrication business. NPN brings to their attention the new and more severe requirements called for by the manufacturers in servicing the 1940 cars.

In selling lubrication service to the 1940 cars, and those of other years as well, the oil companies are selling much more than so many quarts of motor oil, or pints of transmission or differential lubricant, or a chassis greasing job at infrequent intervals.

They are selling a SPECIALIZED AND NECESSARY SERVICE, for the PROTECTION of the CAR OWNER'S INVESTMENT and his SAFETY AND COMFORT in driving, backed by continuous years of experience and research by the oil companies to develop the most efficient lubricants for the purpose.

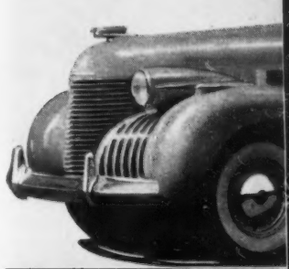
Such a service should carry a profit that will guarantee to the car owner that the oil company continues to look after its job of safeguarding him and his investment.

The oil companies' sales talks on lubrication and Winter Change-Over and other services at their stations in reality are only bringing to the car owner's attention the barest needs for keeping his car in proper running shape. The total cost to the car owner is very small, compared with the cost to him if he neglects his new car.

The 1940 models continue to add to the responsibilities, as well as the profit opportunities, of the oil companies in their proper lubrication and servicing. The car manufacturers themselves urge the need for more frequent changes of crankcase oil, particularly under severe operating conditions, as in the winter. They call attention to the care needed in the selection of the proper lubricant for the rear axles, while the introduction of hypoid axles on trucks means a new operating condition the lubrication must meet.

The hydra-matic transmission, requiring a special lubricant, has been introduced on one new model passenger car. Greater use has been made of the independent front wheel suspension. Gearshifts are being mounted on steering wheels on more of the 1940 models. These are among developments which add greatly to driving comfort but will only function properly if their lubrication and servicing is given proper attention.

NATIONAL PETROLEUM NEWS presents its 1940 New Car Lubrication Manual on the background of a broader conception of lubrication service by the oil companies that will bring more profits not only for 1940 but still more years to come.



CADILLAC

STUDEBAKER

WILLYS

MERCURY 8

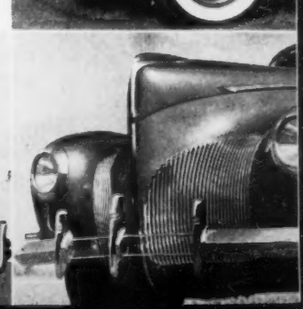
HUDSON

PONTIAC

BUICK

CHRYSLER

LINCOLN-ZEPHYR (Cor.)



1940 NEW CARS

Offer New Servicing Opportunities

- **Technical Refinements Demand Particular Types of Lubricants**
- **New Engineering Requires More Frequent Lubrication**
- **Hydraulic Power Transmission Opens New Oil Market**

MOTORDOM'S new offering — the 1940 car — is already rolling into oil station driveways with its new problems of servicing and its need for a more exact selection and application of lubricants.

Probably the outstanding features of the new cars as a whole, so far as the oil industry is concerned, are:

1—There are fewer points to lubricate and thus the servicing job at oil company stations will be simplified, BUT

2—The greater refinements and improvements in the cars mechanically call for the use of more kinds of lubricants and demand that these be applied in more skillful manner AND AT THE TIMES DESIGNATED by the car makers.

The new 1940 car gives the oil industry's highly skilled and well equipped stations new opportunities for truly expert servicing. If the right lubricants are not used, or if they are applied to the wrong points, and if the greater frequency of application is not rigidly adhered to by the station service men, the car owner will suffer loss of driving comfort.

The oil industry more than ever before will have more reason to talk and sell the quality of its service, while the oil marketers and managers and supervisors will have greater responsibility to see that the higher type of skilled and expert service is maintained.

The new cars offer greater sales opportunities and more sales points but they also call for more particular and exacting management to insure the service that they need.

Furthermore, judging from the way the new 1940 cars are selling and despite the threat of labor strikes, automobile manufacturers are confidently counting on at least a 10 per cent increase in sales over last year, a gain which will bring more business for the oil marketing division.

The outstanding features of the new cars from an oil man's standpoint—and accessory selling standpoint—can be summarized as follows—

Two car makers recommend more frequent motor oil changes, even back to 1000 miles.

One maker cut his chassis lubrication recommendation from 2000 to every 1000 miles.

All makers warn that more care be given to lubrication and closer adherence to their recommendations on oil changes.

Improved grill design provides better cooling of 1940 engines, in an effort to keep operating temperatures below the critical point at which "varnish" or lacquer-like formations occur.

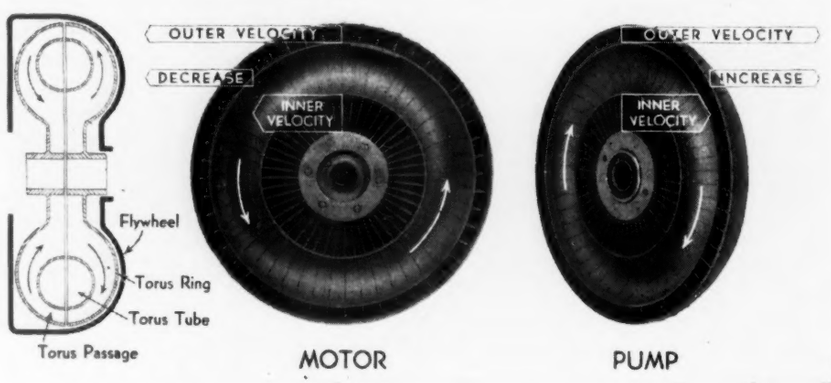
Some car manufacturers recommend that "Passenger Car Duty Hypoid" gear lubricant be used to lubricate the hypoid rear axles of passenger cars—using this nomenclature to differentiate from a lubricant suitable for truck duty hypoid rear axles.

One manufacturer has introduced a fully automatic oil hydraulic transmission following eight years of research. This development has passed the experimental stage and in the opinion of automotive engineers, future developments will see greater use of hydraulics in transmitting engine power to the drive shaft. Requiring 10 quarts of special lubricant to be drained at 5000 mile intervals, this development opens new frontiers for the oil marketer.

Two car manufacturers offer independent front wheel suspension as a new feature in 1940.

There is one new convert to hydraulic brakes.

Six makers have eliminated lubrication of threaded "U" spring



Using a special oil lubricant which requires changing at 5000 mile intervals, Oldsmobile's new hydra-matic drive features a fluid coupling consisting of a pump or driving unit and a motor or driven unit. White arrows in the torus tube of each unit show direction of rotation. The outline arrow "Increase" represents engine torque or rotating force absorbed by oil acceleration. By the same token, the Decrease arrow indicates torque generated in motor by oil deceleration. Reprinted by Permission from MoToR, the Automotive Business Magazine

shackle bolts by adopting rubber bushings.

Steering column gear shifts are standard on all but three cars.

Oil filters are new as standard equipment on all models of two lines and are new as optional equipment on another line.

Sealed beam headlights, safety contribution for 1940, are standard on all but three cars this year, and will offer new profit opportunities to the service station.

Three manufacturers have adopted devices for locking the alligator type hoods to prevent theft of under-the-hood equipment—only one line of cars had a hood lock in 1939. Release of the lock is through a knob control located on the instrument panel. The development, which may spread to other cars, means oil marketers must plan new sales talks to get under the locked hoods.

Newest and most important engineering wrinkle of the year is the "hydra-matic" transmission developed by the Detroit Transmission division of General Motors Corp., and making its first appearance exclusively on Oldsmobile—optional equipment at extra cost on all models. It points to a new trend in automotive engineering.

Cars equipped with this fully automatic gear shift—the first on American passenger vehicles—will offer new profit opportunities to the oil marketer. Compared to a capacity of 6 pints on the automatic safety transmission introduced by Oldsmobile in 1937, the hydra-matic drive will require a drain and refill every 5000 miles with 10 quarts of a special "hydra-matic" fluid scheduled to retail at 30 cents a quart.

A number of oil companies have developed oils for use in this new transmission unit and they have been tested thoroughly by General Motors to insure that no "varnish" trouble will develop and that viscosity will not change appreciably throughout an operating temperature range of —25 to 115 degrees Fahr. Viscosity range of the lubricant will be SAE 10 W in winter and SAE 20 W in summer.

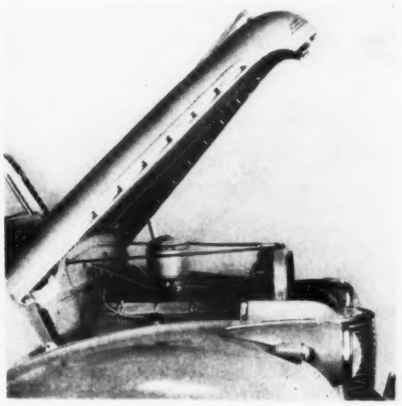
Early distribution of the approved fluid will probably be through Oldsmobile dealers, at least until a sufficient number of cars equipped with the hydra-matic system are on the road to warrant general manufacture and distribution by the oil companies. The fluid will be packaged in one and five quart cans—the smaller quantity for maintaining fluid level between drains, should this prove necessary.

Although this new drive is replacing the previous automatic transmission, Oldsmobile is specifying the special hydra-matic lubricant for some 30,000 cars built during 1937, 1938 and 1939 with the automatic feature. It should be pointed out that this lubricant is not to be confused with the low viscosity mineral oil distributed by Chrysler for use on its "Fluid-drive" transmission.

The hydra-matic transmission eliminates the conventional clutch, clutch pedal and gearshift lever. Only controls are the accelerator pedal, brake pedal and a steering column mounted lever offering four positions—neutral, high, low and reverse.

Starting in low gear, the transmission shifts automatically to second, third and fourth, or direct drive with a rear axle ratio of 3.6 to 1. The point at which a shift is made from one gear to another is governed by throttle opening. With full throttle the shift from third gear to direct drive is a a car speed of 65 mph.; at low throttle the shift occurs at 23 mph. It is impossible to stall the engine by a careless start.

Essentially the new transmission is made up of three units—fluid coupling, gearbox and hydraulic control system. The latter operates to supply varying degrees of oil pressure required to actuate clutch pistons and brake bands



Counter-balanced, alligator-type hood adopted by Chevrolet in 1940 includes a new hood locking device which is operated by control knob on instrument panel in driver's compartment

of the planetary gear units in the transmission, thereby providing hydraulic control over the change in gear ratios.

Designed to meet objections of "slip" under normal high gear driving conditions, and a tendency to "creep" at idling speeds, with the conventional clutch, the fluid coupling consists of a pump or driving member and a motor or driven member.

Likened by many to two halves of a grapefruit, these members are made of heavy gauge steel and both have 48 vanes spaced at equal distances apart. In operation the two vaned members face each other. The coupling is filled with oil—6 of the 10 qts. are utilized here—under pressure of 30 pounds developed by a pump supplying hydraulic pressure required to operate the transmission.

Centrifugal force applied to the oil by the driving member is transmitted

Longer life, more uniform light, and ease of adjustment and replacement among advantages offered by new sealed beam headlight. On some models signal lights for indicating turns are part of fender parking light

through the vanes to the driven member and the car moves. When the car is standing still, "slip" or lack of driving force between the two members is 100 per cent, but this decreases rapidly as the car speed increases, being only five per cent at 10 mph, less than one per cent at 20 mph and negligible at maximum speed. Amount of torque produced by the engine is governed by the throttle opening.

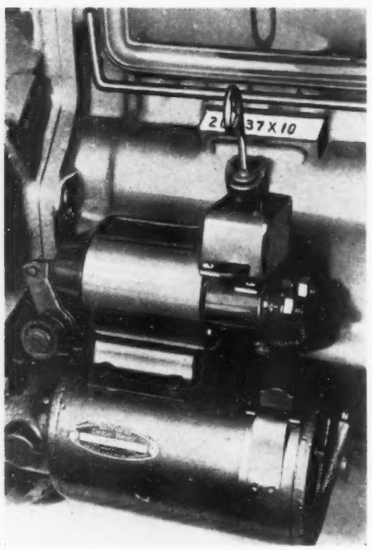
Further standardization by individual automotive manufacturers offering several makes, or models of cars, is seen in 1940 along lines scheduled to make engines, transmissions, rear axles and other parts of their various models uniform and interchangeable.

Reference to N.P.N's car Capacity Chart in this issue will illustrate this point and the effect of the develop-

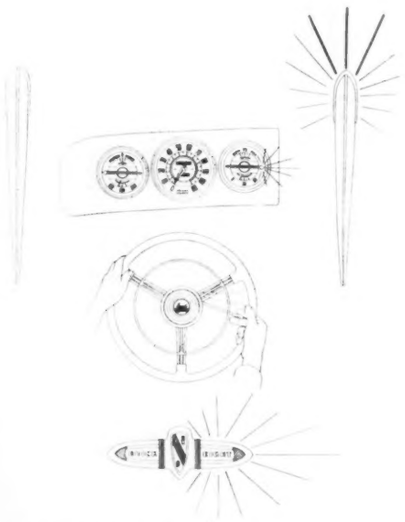
(Continued on page 73)

Aids to New Car Lubrication In This Issue—

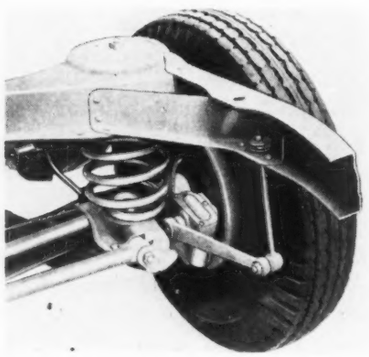
Servicing Requirements for All the New Models	pgs. 33 to 54
Driving Temperatures Govern Oil Changes	55
1940 Capacity Chart	56
Compression Ratio Chart	59
Frequent Oil Changes Urged By Car Makers	60
Hypoid Gears in Trucks Raise New Problem	66
Today's Oils Improved In "Varnish" Resistance	68



Relocation of oil gauge stick on 1940 Buicks—farther forward and higher—has improved accessibility



Signal lights, indicating driver's intention to turn, are fore and aft on 1940 Buicks as standard equipment. Right turn indicated by above diagram



Rear shock absorbers mounted on brake backing instead of frame, except "80" and "90" with new location affording greater control over axle movement

BUICK . . .

1940 Changes Affecting Servicing

Lubricant Change

Frequencies Recommended By Car Manufacturers

CRANKCASE
2000 to 3000 miles under normal driving conditions. Under adverse driving conditions—dusty roads, short runs (frequent starts) in cold weather, hard driving, temperature variation — more frequent changes.

TRANSMISSION
Drain, flush and refill twice a year, but in no case should lubricant be used for more than 10 000 miles. Refill with SAE 90 EP for temperature above —10°, and with SAE 80 EP below this point.

REAR AXLE
Drain, flush and refill twice a year with Passenger Car Duty Hypoid lubricant, SAE 90 above —10° and SAE 80 below this temperature—but in on case should lubricant be used for more than 10.000 miles.

Lubrication Change

FRONT END SPRING SUSPENSION
New type, self lubricated compressed-fabric bushings with steel shell, used to secure inner ends of lower control arms to the inner shafts on "40," "50," "60" and "70" series. No lubrication required. (Replaces rubber bushings introduced at these points, series "40" and "60," 1939). New lubricant seals used at outer ends of control arms.
Series "80" and "90" require chassis lubrication at 1000-mile interval, both sides upper and lower control arms—fitting provided only one side, 1939. Lubricant seals also used on these series at inner ends lower control arms. (Object of seals to retain lubricant and exclude mud or water.)

PROPELLER SHAFT BEARING
Change in design eliminates special pressure relief fitting at center of two-piece propeller shaft on "40" and "60" series, and oil plug on "80" and "90" series, on 1939 models.

TRANSMISSION CONTROL IDLER LEVER
Use chassis lubricant every 1000 miles. (Found only on "50" and "70" series.)

OIL FILTERS
Standard equipment on all series 1940. Equipped with removable cartridge requiring replacement 8000 to 10.000 miles, or when oil on gauge stick appears dark. May be drained through plug in bottom of unit. (Only models equipped with heavy duty oil bath cleaner had oil filters in 1939.)

Mechanical Changes

Mechanical Changes Affecting Servicing For 1940 two new series, "50" (Super) and "70" (Roadmaster) featuring completely new bodies without running boards. Performance is comparable with "40" and "60" series, respectively.

COOLING SYSTEM
New design front end grill increases cool air flow to engine—Series "60" radiator core size increased 27 square inches.

Capacity Changes

No changes in crankcase, transmission, and rear axle capacities over 1939. New 50 and 70 series follow specifications for 40 and 60 series, respectively. Radiator capacity for 40 and 50 series now 12½ quarts (was 13¼ qts.), capacity 60, 70, 80 and 90 now 16 quarts (was 17). For cars equipped with Buick hot water heater add 1⅜ qts.

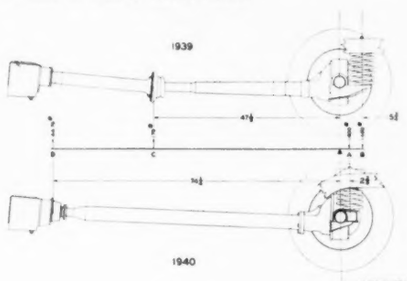
Gasoline tank capacity all 1940 models reduced one gallon, 40, 50, 60, and 70 series now 17 gallons; 80 and 90 series 19 gallons.

Pressure of about 7 pounds maintained on system by tight fitting radiator cap and special construction overflow line. This raises boiling point; increasing efficiency at low speeds in high atmospheric temperatures, and in high altitudes. (Care should be taken to release pressure before removing radiator cap—unscrew cap half a turn and wait a minute). Same system previously used on Cadillac, LaSalle.

REAR SHOCK ABSORBERS
On "40," "50," "60" and "70" series mounted on rear brake backing (were on frame in 1939). New position gives maximum control of axle movement, providing more leverage against road bumps. No change in servicing requirements. Location of shock absorbers on "80" and "90" series unchanged.

TURN INDICATORS
Use of direction signal lights introduced on the rear of 1939 cars has been extended to include front positions on all 1940 models. Rear signal lights—32 c.p.—work in conjunction with front light indicators—21-3 c.p.—on fender parking lights, and with right and left pilot lights—1 c.p.—on instrument board. Arrangement of left and right circuits in series allows pilot lights to show driver whether signal system is functioning.

ENGINE
Oil stick redesigned and relocated higher up and further forward on engine block to make it more accessible.



Single propeller shaft replaces divided unit used in 1939, eliminating pressure relief bearing and lubrication fitting at center of former two-piece shaft on series "40" and "60"

CADILLAC–LASALLE . . .

1940 Changes Affecting Servicing

Lubrication Change

Frequencies Recommended

By Car Manufacturers

CRANKCASE

2000 miles under normal driving conditions. (On new car, the oil should be changed at end of first 1000 miles.) Under adverse driving conditions — dusty roads, short runs (frequent starts) in cold weather, low operating speeds—contamination of oil may make more frequent changes necessary.

TRANSMISSION

Check lubricant level every 1000 miles, adding lubricant as needed. Drain, flush and refill with fresh lubricant every 6000 miles. SAE-90 gear lubricant, SAE 90 E.P. gear lubricant, or SAE 90 Hypoid lubricant recommended for rear axle may be used in transmissions the year-round.

REAR AXLE

Check lubricant level every 1000 miles, add fresh if necessary. Drain, flush and refill with Passenger Car Duty Hypoid Lubricant, SAE 90 in all localities except where winter temperatures are consistently below zero, when SAE 80 may be used.

Capacity Changes

Capacities of crankcase, transmission, rear axle, cooling system, and fuel tank for all models Cadillac and La Salle remain unchanged from 1939, except gasoline tanks on the V-16 and the 40-75 Cadillacs hold half a gallon less—26 gallons.

Lubrication Change

FRONT WHEEL SUSPENSION

Design and lubrication requirements standardized for two La Salle (40-50 and 52) and three Cadillac (40-62, 72 and 60-Special) models. All now have 10 points on right side of the suspension and 9 on the left side which require chassis lubrication every 1000 miles. (The number of fittings varies with various models in 1939.) The Cadillac series 40-75 and 90 (V-16) remain practically the same as for 1939.

PEDALS AND CLUTCH ROCKER SHAFT

Series 40-50, 52, 62, 72 and 60-S have three fittings requiring chassis lubrication every 1000 miles. (In 1939 La Salle had one fitting on the clutch rocker shaft, Cadillac 61 and 60-S had one fitting on the Pedal shaft and 60-S had two additional oil holes on this shaft requiring engine oil every 1000 miles.)

REAR SPRING SHACKLES

Continue to be rubber bushed for all models except rear shackles on 60-S series, where two fittings on each side require chassis lubrication every 1000 miles, and on the 75 and 90 series, where one fitting on each side requires lubrication at the same intervals.

UNIVERSAL JOINT SPLINES

Series 75 now follows other models in location of this point at front end of drive shaft (was at rear in 1939). Requires chassis lubrication every 1000 miles.

Mechanical Changes

Two new series offered for 1940, 52 (La Salle, having same engine and wheelbase as 50) and 72 (Cadillac, having same engine as 62 but a 9-inch longer wheelbase).

DIRECTION SIGNALS

Standard equipment on all models. On some early 1940 cars, 21 c.p. bulbs were put in front lamps and 32 c.p. bulbs were put in the rear. On later cars, 21 c.p. were put in both front and rear. In replacing bulbs it is important same size as originally installed be used. Flashing signal—1.5 c.p. bulb—on lever located under steering wheel at left notifies driver when indicator is in use.

FRONT WHEEL SUSPENSION

Improved by use of pressed steel arms. Threaded bushings on 50, 52, 62 and 72 series are fitted with "Neoprene" seals—designed to retain lubricant and exclude mud and water.

REAR SPRING SUSPENSION

New design using conventional rather than inverted shackles, and cross-link stabilizers on all except 75 and 90 models.

BRAKES

A minor change on all series is the use of dust seals around the brake drums. These must be taken off before brake drums can be removed.

ENGINE

New carburetor calibration, new, more efficient fuel pump and an improved intake manifold—fastened to the engine so it is parallel with the ground instead of following angle of engine which slopes toward the rear.

CHASSIS

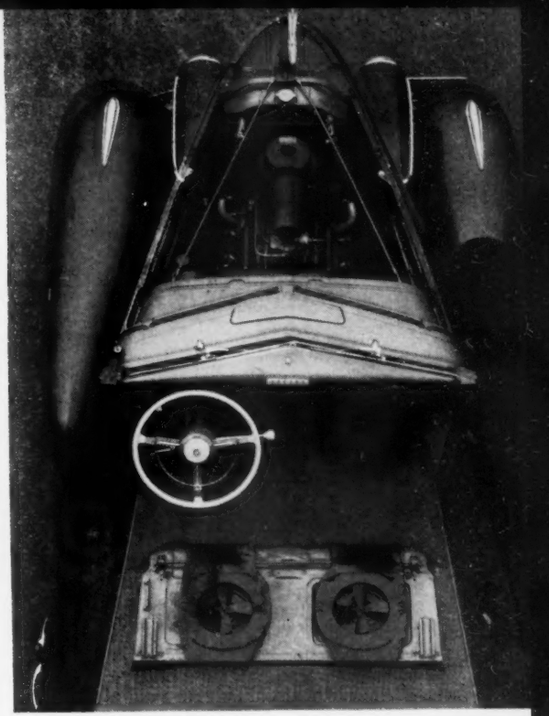
A clutch driven disc is used, in which the cushioning is derived from the spring-type construction of the disc itself; a new recirculating ball-type steering gear on the 72 series only.

COOLING SYSTEM

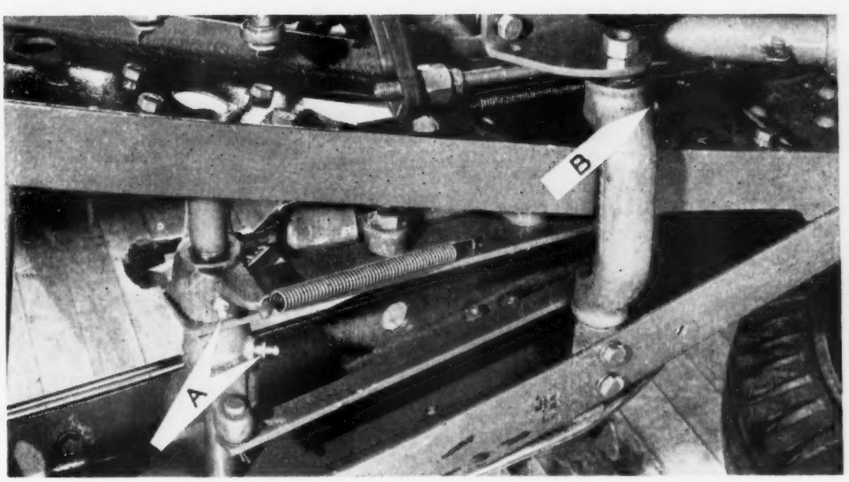
Area of radiator core in 60-S series increased from 381 to 400 square inches.

HEATER

Available as accessory equipment is a new heating unit. Three, 2-speed motor driven blowers, with each motor controlled by a separate switch. Two blowers are under the front seat and a third is under the cowl.

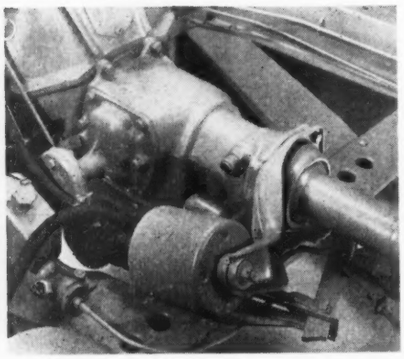


A three-purpose heater is introduced on 1940 Cadillacs and LaSalles. Three blower fans, each with separate heating coil, make up the system. Two units are located under driver's seat with the third under dash for defrosting and ventilations

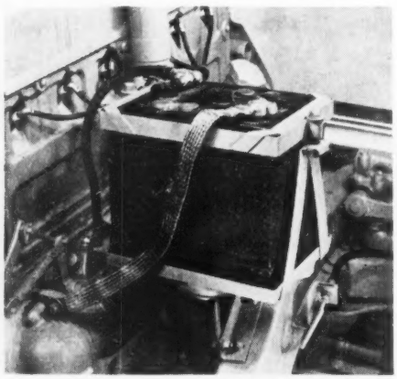


A—clutch and brake pedal shaft; B—clutch rocker arm

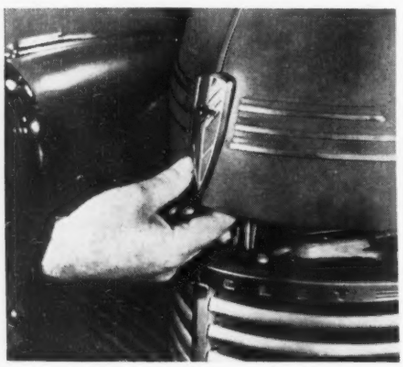
Three fittings, two on brake and clutch pedals "A", and one on clutch rocker shaft "B", require chassis lubricant every 1000 miles, replacing one fitting and two oil holes in 1939 models. The new fittings are on all models except "75" and "90" series



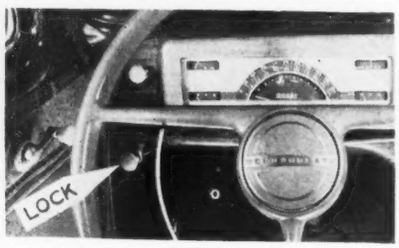
1940 Chevrolet transmission housing, showing mounting of vacuum power shift mechanism used in connection with steering column mounted gearshift, which is standard on all models. New "T" spoke steering wheel of Deluxe series has built-in, horn-blowing ring



Improved accessibility to the Battery in 1940 Chevrolets is obtained by a new location under engine hood on right side



It is necessary to release a secondary, or safety, catch from outside the car before new compartment-locked hoods on the new Chevrolets can be raised. This catch is released by pulling it forward



A push and pull rod, shown at left under instrument panel, operates locking device on alligator hoods of 1940 Chevrolets

CHEVROLET . . .

1940 Changes Affecting Servicing

Lubricant Change

Frequencies Recommended By Car Manufacturers

CRANKCASE

2000 to 3000 miles under normal driving conditions. Under adverse driving conditions—dusty roads, short runs (frequent starts) in cold weather, low operating speeds—contamination of oil may make more frequent changes necessary.

TRANSMISSION

Drain, flush and refill with SAE 90 Transmission Lubricant, twice a year or approximately 6000 to 10,000 miles. Use SAE 80 for long periods of extremely low temperatures.

REAR AXLE

Drain, flush and refill with SAE 90 Passenger Car Duty hypoid lubricant (SAE 80 in extreme cold weather) twice a year or every 6000 to 10,000 miles. Flush with light flushing oil, do not use water, steam, kerosine, gasoline, alcohol, etc.

Lubrication Change

BRAKE AND CLUTCH PEDAL

Lubricated at factory and should require no further lubrication. However, should pedals operate "stickily", remove plug and fill reservoir with chassis lubricant. Care should be taken not to get any lubricant on the nearby rubber parts.

VACUUM POWER GEARSHIFT MECHANISM

Standard on all 1940 models—was optional in 1939. Lubricated at factory and should not require further lubrication under 15,000 miles. However, recommended that, if shifting becomes "sticky", the protecting boot should be inspected for leaks, at which time the levers should be lubricated with a graphite grease and boot reassembled.

OIL BATH TYPE AIR CLEANER

For use under extreme dust conditions, 1940 recommendations continue to specify cleaning at 2000-mile intervals, and refilling with not less than SAE 50 viscosity oil in summer, but add that a lighter grade oil be used in winter. Copper mesh type should also be cleaned every 2000 miles.

BATTERY

Should be filled with distilled water to a level not more than 1/4 inch above plates (was 1/2-inch in 1939). Caution urged against adding water in freezing weather unless car is to be used immediately —to mix fresh water with battery solution.

FRONT SPRING SHACKLES

Found only on Master 85 series, semi-elliptic front springs are shackled at the front in the 1940 model, instead of the rear. Chassis lubrication required at 1000 mile intervals.

SHOCK ABSORBERS

Now standard equipment on all models—in 1939 on Master De Luxe. Double-acting type used on front of all models and on rear of De Luxe models. Single-acting type now on rear of Master 85. All require inspection to assure proper fluid level at 1000-mile intervals.

Capacity Changes

Hypoid rear axle capacities all models increased 1/2 pint to 3 1/2 pints. Gasoline tank capacity increased two gallons to 16, on all models but business coupe and sedan delivery, which remains at 18 gallons. Capacities of crankcase, transmission and cooling system are unchanged.

Mechanical Changes

Three series of cars for 1940, designated as Master 85, Master De Luxe and Special De Luxe, are virtually identical except for: rear axle (Master 85 has gear ratio 3.75 to 1, De Luxe models have 4.11 to 1—all hypoid); steering gear (ratio of 19 to 1 on Master 85 and 17.5 to 1 on De Luxe models); and front suspension (Master 85 continues with conventional springs and De Luxe models with independent coil springing).

VACUUM POWER GEAR SHIFT

Standard equipment on all 1940 models, together with steering column mounted gear shift—both were optional at extra cost in 1939. Shifting mechanism permits use of either manual or vacuum control.

HOOD

Wide opening alligator-type counter-balanced hood adopted on all models, opens at front and is equipped with concealed lock under prow. The lock is operated by a control located in driver's compartment under left side of instrument panel. Pulling knob out allows hood to raise one inch, exposing secondary locking catch which must be released before hood can be raised. Hood locks automatically when lowered itself.

GENERATOR

Shunt-wound type replaces fixed third-brush type—charging rate when hot, 34 to 36 amperes at 2300 rpm, instead of 25 to 28 amperes at 3600 rpm as in 1939. Maximum charging rate, which is maintained constant at all speeds, is reached at 20 mph.

OIL PUMP

Normal oil pressure increased from 13.5 pounds at 50 mph to 15 pounds at 40 mph.

BATTERY

Relocated in engine compartment on right side (was under floorboard). Continues at 100 ampere hour rating, but has 15 instead of 17 plates per cell.

REAR SUSPENSION

Tension-type rear shackles substituted for compression type. Lubrication requirements continue to call for chassis lubricant at 1000-mile intervals.

CHRYSLER–DESOTO . . .

1940 Changes Affecting Servicing

Lubrication Change

Frequencies Recommended By Car Manufacturers

CRANKCASE

Under normal driving conditions, 1500 to 2000 miles in winter and 2500 to 3000 miles in summer. Drain frequency affected by dust conditions or where car is driven short distances at low speeds in freezing weather. Drain at 500-mile intervals during long periods of extreme low temperatures. Warm engine thoroughly before draining. Use SAE 30 oil for temperatures above 90° F. (SAE 40 recommended in 1939).

TRANSMISSION

Drain, flush and refill twice a year or every 15,000 miles with SAE 90 Gear Lubricant for temperatures consistently above —10° F. (Use SAE 80 for temperatures below this) Seasonal change recommended in 1939, using SAE 160 or 140 for temperatures above 32° F., SAE 90 between 32° and zero and SAE 80 below zero.

Same drain frequency applies to transmissions equipped with overdrive (was at 6000-mile intervals in 1939). Use SAE 50 Low Cold Test Engine Oil, or SAE 50 Low Cold Test Aircraft Engine Oil for temperatures above —10° F. Below this use SAE 30 L.C.T. engine oil, or a mixture of 60% SAE L.C.T. engine oil or Aircraft engine oil and 40% No. 10-W engine oil. (Varies considerably from 1939 recommendations.)

REAR AXLE

Twice a year, or every 15,000 miles, drain and flush (with flushing oil). Refill with E.P. hypoid lubricant SAE 90 for temperatures above zero, and SAE 80 for temperatures consistently below zero. Should level of lubricant drop, due to leakage, drain, flush and refill.

Lubrication Change

FRONT WHEEL SUSPENSION

Lower control arm pivot bushing on each side of independent front springing has one instead of two fittings requiring semi-fluid chassis lubricant at 1000-mile intervals; eliminates two lubrication points.

REAR SPRINGS

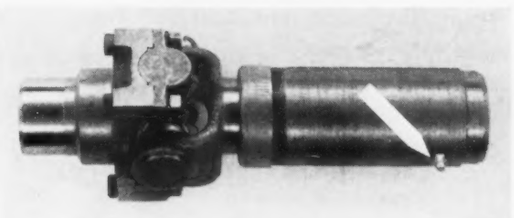
De Soto rear shackles have rubber bushings, which replace threaded "U" type and eliminate four lubrication points.

UNIVERSAL JOINT

All models have new cross-type universal joints, spline on front unit requires semi-fluid chassis lubricant at 2000-mile intervals. (1939 recommendation to disassemble, clean and repack at 15,000 miles discontinued, but if unit is disassembled for any reason it should be lubricated with heavy fibre grease).

GENERATOR

Continues to require 10 drops of oil each 6000 miles. To oil lift cover on front and slide cover on rear.



1940 Chrysler and De Soto models feature a new Detroit, cross-type universal joint. Chassis lubrication required on slip at 2000-mile intervals. Fitting indicated by arrow. Credit — Universal Products Corp., Inc.

REAR WHEEL BEARINGS

Remove plug, insert fitting, inject ½ ounce of short-fibre wheel bearing lubricant and replace plug. (No quantity of lubricant specified in 1939.)

Capacity Changes

Transmission capacity standardized on 1940 Chrysler made cars—2¾ pints without overdrive, 4 pints where overdrive available. (In 1939 was 2¼ pts. on Chrysler six and De Soto standard, and 3 pts. with overdrive. On Chrysler 8 was 3½ pts. without overdrive and 4½ pts. with.)

Cooling systems remain 24 quarts on Chrysler eight-cylinder models, but increased one quart to 18 on six-cylinder Chrysler and reduced two quarts to 17 on De Soto.

Fuel tanks reduced one gallon to 17 on De Soto and Chrysler 6s and reduced one gallon to 20 on 8s.

Mechanical Changes

1940 line includes Chrysler Six in Windsor and Royal models, the Eight in Saratoga, New Yorker and Traveler models and the Crown Imperial.

TRANSMISSION

Standardized on all models. Housing is longer and has a casting attached at rear which can be removed to allow fitting an overdrive. This casting is on all transmissions, including models not offering overdrives. Transmission and overdrive cases each have a filler and drain hole. Neither the filler holes nor the drain holes are on the same level. When filling or draining it is necessary to use both filler and both drain holes. (In 1939 there were two drains but a common filler hole on transmissions of models equipped with overdrive.)

Overdrives are available as special equipment on Windsor, Saratoga and New Yorker Eights. Custom and Deluxe De Sotos: are standard on the Crown Imperial; not offered on any other models. Fluid drive is standard on the Crown Imperial and available as special equipment on Saratoga and New Yorker.

WINDSHIELD WIPER

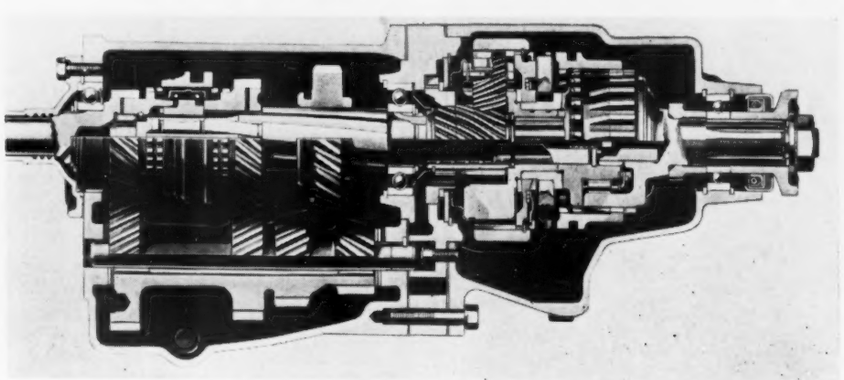
Two-speed electric units now standard on all models, regulated by three-point switch on dash.

CHASSIS

Axles, seats and engine relocated on all models. Overall length and frame length unchanged. Rear axle is back 7½ inches, front axle is back 4 inches (see change in front wheel suspension), making wheelbase 3½ inches longer and permitting use of rear doors on the sedan models which require no cutout to clear the rear fender.

WARNING LIGHTS

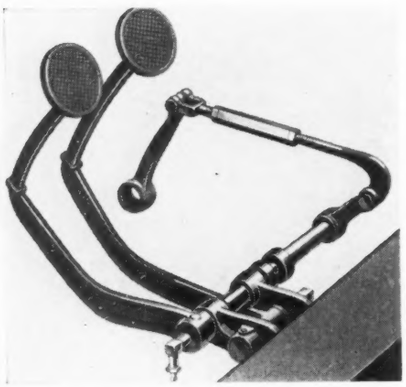
Standard on all models, signal lights indicate when oil pressure is down, gasoline supply is low, ammeter discharge excessive, or cooling temperature too high.



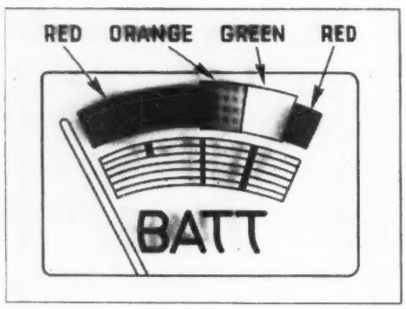
Design of transmission has been standardized for all cars made by Chrysler, with a casting bolted to the rear of the transmission case, through which the propeller shaft extends. This casting can be removed for installation of the overdrive on models offering this accessory. Above view shows overdrive unit in place

FORD–MERCURY–LINCOLN . . .

1940 Changes Affecting Servicing



New fitting requiring lubrication at 1000-mile intervals added to outer end of clutch pedal shaft on the 1940 Lincoln-Zephyr



Battery gauge on 1940 Ford line shows battery condition. After ignition switch is turned on, before starting motor, pointer should rise to Orange sector in at least one minute if battery is fully charged. Pointer should remain in green sector under normal driving conditions, and trouble is indicated by pointer in right hand red sector

Hood lock on the Ford V-8

Lubricant Change

Frequencies Recommended By Car Manufacturers

CRANKCASE

Initial drain 300 miles, all models. Thereafter at 2000-mile intervals on Ford and Mercury, 5000 miles on Lincoln-Zephyr.

TRANSMISSION

Each fall and spring or every 5000 miles whichever occurs first. Drain, flush and refill. SAE-140 summer, SAE-90 winter, all models.

REAR AXLE

Each fall and spring or every 5000 miles. Drain, flush and refill. Ford and Mercury use mild extreme pressure gear oil SAE 140 in summer and SAE 90 in winter. Lincoln-Zephyr uses hypoid type gear oil SAE 90 E.P. for temperatures above —10°F.; SAE 80 E.P. below this.

Capacity Changes

TRANSMISSIONS

All models Ford, Mercury, Lincoln-Zephyr now 2¾ pts. (Ford 85, Deluxe and Mercury capacity was 2.5 pts., 60 HP Ford was 1.75 pts. and Lincoln was 3.5 pts.)

COOLING SYSTEM

60 HP Ford 16 qts. (was 14); Mercury 21 qts. (was 22); Lincoln 27 qts. (was 30).

GASOLINE TANK

Ford Deluxe 85 and 60 HP 15 gal. (was 14); Lincoln 19.5 gal. (was 19).

Lubrication Change

GEARSHIFT MECHANISM

New fitting on shift lever under hood-left side, on all models, requires chassis lubricant at 1000-mile intervals.

CLUTCH RELEASE SHAFT

Additional fitting on outer end of shaft requires chassis lubricant every 1000 miles, on all models except Lincoln. Now three fittings at this point, two in 1939.

CLUTCH AND BRAKE PEDAL SHAFT

Lincoln models have a fitting on outer end of clutch pedal shaft calling for chassis lubricant every 1000 miles in addition to one fitting on inner end of this shaft as on 1939 models. Ford and Mercury models now have two 1000-mile chassis lubrication points on clutch and brake pedal shaft—formerly one fitting at this point.

SPRINGS

Use Ford sprin lubricant on front and rear spring tie bolt fittings. Do not use ordinary chassis lubricant. Two types of springs are found on 1940 Lincoln-Zephyr. Springs without covers are not equipped with lubricator fitting and should not be sprayed or otherwise lubricated. Metal spring covers are standard equipped on Mercury and Ford Deluxe—optional at additional cost on other Fords and Lincoln-Zephyr

SHOCK ABSORBERS

A new type, double acting, hydraulic shock absorber with self sealing packing gland—introduced on some 1939 models—is now standard equipment on all Fords and Mercurys. Requires adjustment for pressure in warm and cold weather and check for fluid level at 5000 mile intervals.

Mechanical Changes

CIRCUIT BREAKER

Replaces 20 ampere fuse used in 1939. Intermittently cuts off or interrupts current during periods of heavy electrical overload, as long as light switch is on or until cause of overload is corrected, when the "breaker" automatically restores the normal circuit. Found on all models.

BATTERY

Capacity of 17-plate unit on all models increased from 100 amp.-hr. to 120 amp.-hr. Distilled water should be added to top of filler neck—when cap is screwed in place solution is automatically adjusted to correct level. Two-brush, direct-potential generator, equipped with voltage regulator, provides increased current required by sealed-beam headlights.
Battery-condition indicator—showing high, low and normal condition—introduced on Mercury and Deluxe Fords in 1939—is standard equipment on all models this year.

GEARSHIFT

Steering column location standard on all 1940 models—optional last year.

HYDRAULIC AUTOMATIC TOPS

Top and convertible coupes operated by two vacuum cylinders, one on each side of body, controlled by valve located on left side of instrument panel—standard equipment on Ford Deluxe and Club Mercury coupes and Lincoln-Zephyr Continental Cabriolet.

Cylinder and double piston for raising and lowering convertible top automatically, by vacuum power of engine

HUDSON . . .

1940 Changes Affecting Servicing

Lubricant Change

Frequencies Recommended By Car Manufacturers

CRANKCASE

Drain and flush at end of first 500 miles, thereafter at 2000-mile intervals, or oftener if local conditions warrant—where operated in heavy dust areas, short distances in winter season, or continuously at high speeds.

TRANSMISSION

Drain and refill every 5000 miles with SAE 90 E.P. gear oil in summer or SAE 80 E.P. in winter. In extremely cold weather, three ounces of lubricant may be removed and replaced by similar amount of kerosine, for easier shifting. When equipped with overdrive, drain plug in that unit must be opened.

REAR AXLE

Drain, every 5000 miles, or with change in seasons, and refill with SAE 90 E.P. gear oil summer and winter.

Lubrication Change

FRONT WHEEL SUSPENSION

Independent coil springing adopted on all 1940 models. Eliminates 10 lubrication points—8 on springs and 2 on spring seats. Adds 14 new points requiring chassis lubricant every 1000 miles, including four on upper and four on lower support arm pivot bushing, two on lower support arm to support pivot bushing, two on upper support arm eccentric bushing and two additional points on tie rods which are now the divided type.

WHEEL BEARINGS

Front and wheel bearing lubrication interval extended to 10,000 miles—was half this in 1939. Lubricant required: 1½ oz. on each rear wheel bearing and 3 oz. on front bearings.

UNIVERSAL JOINT

Disassemble, clean and repack needle roller bearing every 20,000 miles—was 10,000 miles in 1939.

GENERATOR, DISTRIBUTOR, STARTING MOTOR

Lubricate these points with engine oil at 2000-mile intervals—was 1000 miles in 1939. (6 cyl. models have grease cup for lubrication distributor shaft—requires one complete turn every 2000 miles, refill 5000 miles.

CLUTCH AND THROTTLE CONTROL LINKAGE

Lubricate with engine oil every 2000 miles.

REAR SPRINGS

Front end of spring rubber mounted on frame—eliminates 1000-mile lubrication of spring hangers.

Mechanical Changes

OIL FILTER

Designed for low pressure oil circulation system, available at extra cost on 1940 models—equipped with cartridge to be replaced at 5000 to 6000 miles. Handle at top of unit permits cover to be removed—new cover gasket furnished with cartridge must be used, care being taken not to damage gasket during installation.

Capacity Changes

COOLING SYSTEM

Capacity increased ½ gal. on both 6 and 8 cyl. models, to 13 and 18 qts., respectively. Shock absorbers: all models 3¾ oz. on front and 6¼ oz. on rear (1939 varied from 5 to 6⅛ oz. on front and 5½ to 6¼ oz. on rear, with different models).

HOOD

Access to oil gauge, battery and under-the-hood lubrication points made easier by new hood design, which includes sides and cat-walks as part of one piece unit which continues hinged at front—hinge lower down—and is locked by control in driver's compartment.

DISTRIBUTOR

Made more accessible on 6-cylinder models by location on top of cylinder block at rear—was on right side at rear. Location continues under intake manifold on right side of 8 cyl. models.

COOLING SYSTEM

Cellular design of radiator cores changed to improve circulation and increase frontal area—capacity increased ½ gal. on both 6 and 8 cyl. models.

TURN INDICATORS

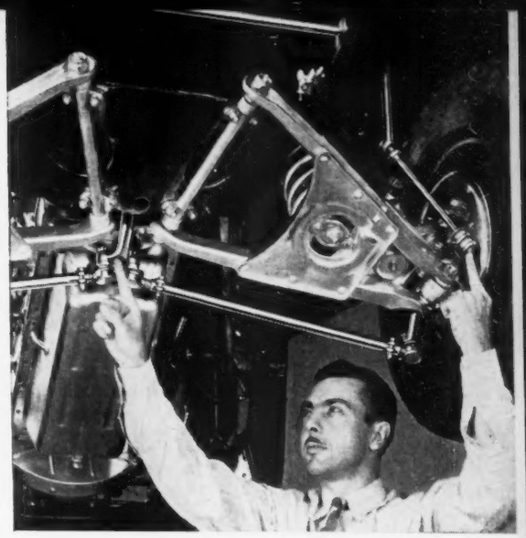
Signal lights to indicate turns standard on Country Club line, optional on others: operated by switch under steering wheel. Front parking lights and tail lights—each containing 3-21 C.P. bulb—wired to flasher on instrument panel. To operate: "R" or "L" button on control switch starts right or left parking and tail lights flashing 80 times per minute and lights pilot in driver's compartment. (Parking lights mounted on each side of hood.)

FRONT WHEEL SUSPENSION

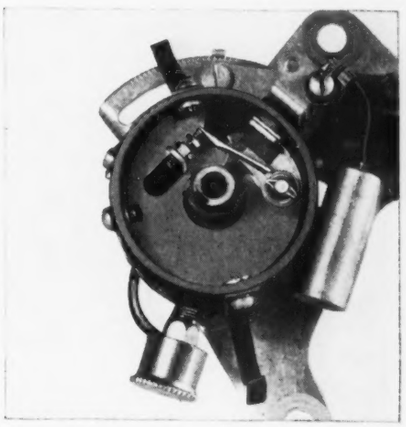
Independent coil springing new on all 1940 models. Direct-action telescopic shock absorbers located within coil springs.

GEARSHIFT MECHANISM

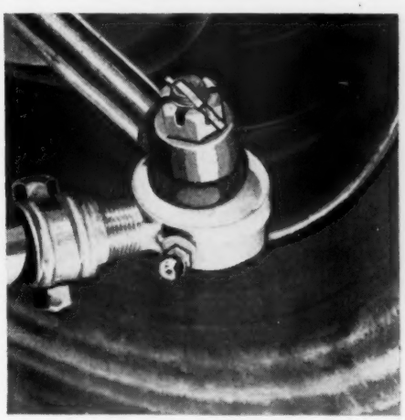
Electric-Hand, optional equipment in 1939, discontinued in favor of improved cable controlled gearshift mechanism. Rubber grommets on lower lever eliminated, the single strand wire control cable is longer and the upper operating lever is lengthened.



Independent front wheel springing is new on 1940 Hudsons, adding 14 new lubrication points. The engineer is indicating with his right hand the center point steering and with his left hand Hudson's Auto-Poise front wheel control, which continues to be featured



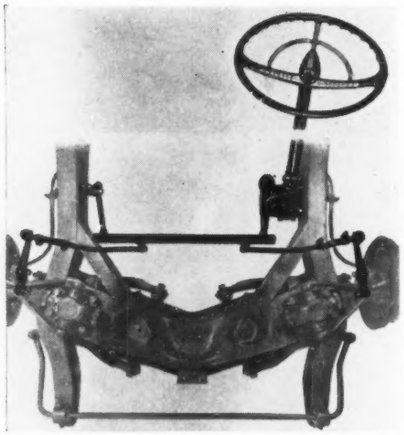
Distributor on 1940 six-cylinder Hudson



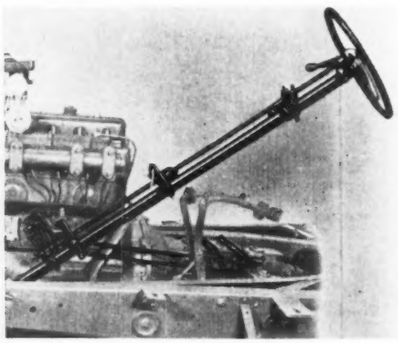
At right, one of two lower arms to support pivot bushings on new independent front wheel springing introduced by Hudson this year. Four tie rod ends—one shown at left—require lubrication in 1940

NASH–LAFAYETTE . . .

1940 Changes Affecting Servicing



Along with front end coil springing, Nash has adopted a new steering gear mechanism. One fitting on idler arm and two on drag link require 1000-mile lubrication



Standard equipment on all models of Nash this year is a new external-type steering post gear shift

Lubricant Change

Frequencies Recommended By Car Manufacturers

CRANKCASE

Varying atmospheric and driving conditions affect drain frequency. For new cars under normal conditions, change recommended at 1000 miles. "Under average and favorable conditions, oil should be changed every 2000 miles," except: if car is driven through heavy dust storm, drain, flush and refill if operated in low temperatures, with frequent stops and starts, change every 1000 miles.

TRANSMISSION

Check level and add if necessary every 1000 miles. Drain, flush and refill twice a year or every 10,000 miles, with SAE 70 motor oil in hot weather or SAE 50 motor oil in cold weather—Do not use E.P. lubricants or heavy transmission grease. Same drain recommendations for models equipped with overdrive—use same lubricant.

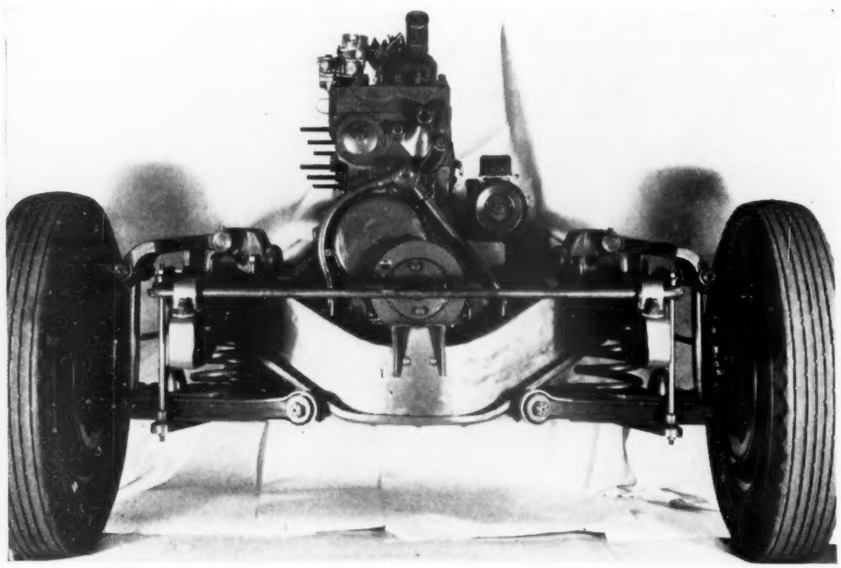
REAR AXLE

Check level every 1000 miles—if low, drain, flush and refill. Drain, flush and refill twice a year or every 10,000 miles with SAE 90 "Nash Approved Hypoid Gear Lubricant."

Lubrication Change

FRONT WHEEL SUSPENSION

Independent coil springing standard on all models; eliminates 7 chassis lubrication points on front springs, adds 7 new points requiring chassis lubricant every 1000 miles; 2 on lower control arms, 4 on upper control arms, 1 on steering idler arm. Similar in design to Oldsmobile suspension.



New on all Nash cars in 1940 is this independent front wheel suspension, which eliminates 7 spring shackle lubrication points replaces them with 8 points requiring chassis lubrication every 1000 miles

Capacity Changes

CRANKCASE

Ambassador 6 models now 6 qts.—was 7 qts.

REAR AXLE

Ambassador and La Fayette 6 cyl. models 4 pts, Ambassador 8 cyl. 5 pts. (all 3½ pts. in 1939).

TRANSMISSION

Models equipped with overdrive 6 pts., formerly 6½ pts.

COOLING SYSTEM

Ambassador 6 increased ½ qt. to 16½ qts.; La Fayette reduced 2 qts. to 20 qts.

KING PINS

Steering knuckle pressure reservoir fitting each side requires chassis lubricant every 1000 miles (1939 models equipped with oil cups and wicks top and bottom)—eliminates two lubrication points. Fitting is on upper part of king pin casting.

GEARSHIFT

Steering column location, two-rod external type, optional in 1939 at extra cost, now standard on all models. Lubricate lower end of shaft below rubber grommet with hydraulic fluid. Lubricate lower rod bushing with engine oil.

SHOCK ABSORBERS

Telescoping type on rear. If servicing required front shock absorbers should be replaced and rear units must be replaced.

HYDRAULIC BRAKES

Check fluid level in master cylinder every 1000 miles and fill if level is more than 1 inch below top. (Was every 3000 miles in 1939).

DOOR KEY LOCK AND TRUNK LOCK

Lubricate with powdered graphite applied with bellow type rubber gun every 1000 miles. (Light oil recommended in 1939).

WATER PUMP

Covered fitting on some 1940 models replaced on later cars by fitting requiring water pump lubricant every 3000 miles. Pump is on left side on generator shaft.

Mechanical Changes

FRONT WHEEL SUSPENSION

Nash Owner's Manual says: "Freedom of king-pins is vitally essential in this front end suspension; therefore, thorough and regular lubrication is necessary to assure easy and correct 'steering' ".

OVERDRIVE

Continues as optional equipment at extra cost, but improved with "overtake", by which driver can return to direct drive by pushing foot accelerator pedal past the full-throttle position. Overdrive becomes operative at 30 m.p.h.

GENERATOR

Shunt-wound type, with a maximum charging rate of 35 amperes, equipped with voltage control for maintaining current output to sealed-beam headlights.

BATTERY

La Fayette, 15-plate, capacity 95 amp. hr.; Ambassador 6, 15-plate, capacity 105 amp. hr.; Ambassador 8, 17-plate, 120 amp. hrs. capacity.

At all seasons

When gasoline consumption slows down, furnace oil consumption speeds up and that's fine for the Dubbs refiner

More and better gasoline is what he wants when motoring is at its height—and Dubbscracking is the way to make it

More and better furnace oil—and less gasoline—is what he wants in the home-heating season

Dubbscracking is the way to make that too—and cracked fuel oil of low cold test and high heat value—or coke of special quality

Dubbscracking meets year-round markets

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

OLDSMOBILE . . .

1940 Changes Affecting Servicing

Lubricant Change

Frequencies Recommended By Car Manufacturers

CRANKCASE

Under normal driving conditions every 1000 miles—was 2000 to 3000 miles in 1939. Under dusty driving conditions, or where it is necessary to stop and start frequently, more frequent change of crankcase oil recommended.

TRANSMISSION

Conventional type: drain and refill every 10,000 miles, or twice a year with SAE 80 gear lubricant.
Hydra-Matic type: Drain and refill at 5000-mile intervals with special hydra-matic fluid. Unit with 10-quart capacity replaces conventional transmission. Same fluid, available in 5 and 1-quart cans, recommended for 1937, '38 and '39 cars equipped with automatic transmissions.

REAR AXLE

Drain and refill twice a year or every 10,000 miles with S.A.E. Passenger Car Duty hypoid lubricant, except for temperatures consistently below minus 10 degrees, then use SAE 80 Passenger Car Duty hypoid.

Capacity Changes

COOLING SYSTEM

Capacity of "60" and "70" series increased one gal. to 18 gal. "90" series decreased 3 gal. to 21 gal.

Lubrication Change

UNIVERSAL JOINT

Slip joint at rear end of drive shaft discontinued, eliminating one fitting requiring chassis lubricant every 1000 miles. Rear slip joint introduced in 1939 on cars equipped with automatic transmission. Slip joints at front end automatically lubricated through the transmission.

FRONT WHEEL BEARINGS

Clean and pack with wheel bearing grease of high melting point every 5000 miles (was "at least once a year or every 10,000 miles, which ever occurs first," in 1939).

DOOR LOCK OIL PADS

Use door ease grease—was light engine oil in 1939.

DOOR CHECK LINKAGE

Apply oil to pivot point and graphite to rubber bumpers.

HOOD

Lubricate the shroud hood lacing with door-ease. Do not use cup grease. (Penetrating oil recommended in 1939.) Use of engine oil to lubricate door hinges and latch, continues to be recommended.

Mechanical Changes

HYDRA-MATIC TRANSMISSION

Standard on "90" (Custom 8 cruiser) models, the unit will also be available at extra cost on "60" and "70" cars. Liquid fly-wheel combined with fully automatic transmission. Controlled from lever located on steering column. Offers transmission ratios of First: 3.658 to 1; second: 2.53 to 1; third: 1.44 to 1; fourth: 1 to 1; reverse: 4.30 to 1. Clutch and clutch pedal eliminated.

GEARSHIFT

Standard in 1939, steering-column mounted gear shift modified in 40 models. Control lever operates on a small ball socket with ball seated in a fabric, self-lubricated bushing. Cable shift mechanism replaced by rod arrangement—No lubrication required. Gear selecting mechanism enters transmission from left side.

TURN INDICATORS

Similar to those on Buick, lights to signal turns are optional equipment at extra cost on Oldsmobile. To adapt fender parking lights to signal system, a double filament, 3-21 C.P. bulb replaces the single filament type.

BATTERY

Series "60" and "70" equipped with 15-plate, 100 amp. hr. capacity battery. Series "90" has 17-plate, 115 Amp. hr. capacity. Charging rate of generator is 33 amperes when hot—equipped with voltage and current regulator for use with sealed beam headlights.

WATER PUMP

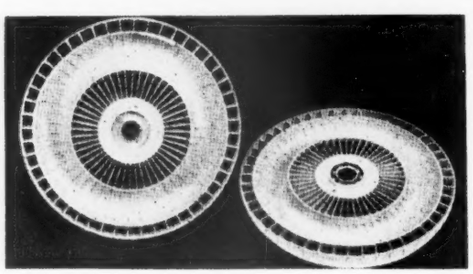
Rubber seal on water pump shaft has been replaced by brass washer which throws water away from bearing. No lubrication required.

HOOD

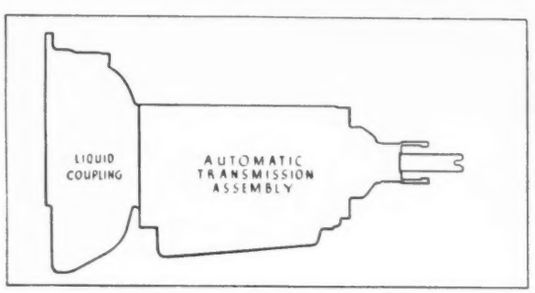
Equipped with latch operated by rod control located within front compartment. Hood is unlocked by pulling knob control out; when hood is closed, the rod automatically returns to "locked" position. Knob is on instrument panel at extreme left.

New Hydra-Matic Drive

Oldsmobile's new Hydra-Matic drive utilizes turbine principle in transmitting engine power through the automatic transmission and propeller shaft to the rear wheels

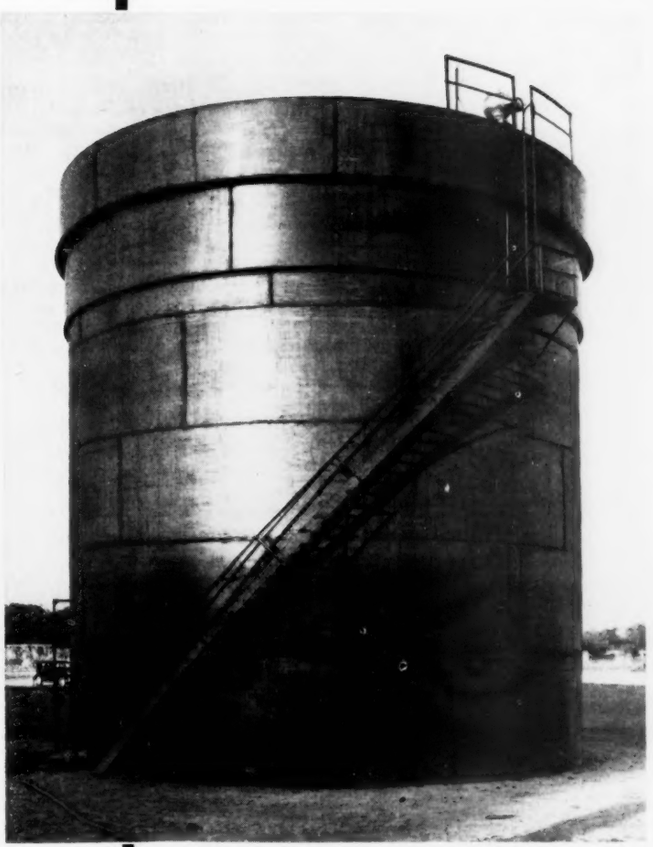


These two vaned members face each other to form the fluid coupling



Hydra-matic drive coupling, replacing both conventional clutch and the transmission

GRAVER EXPANSION ROOF



Graver Expansion Roof on 10,000 bbl. tank at a Major Oil Company Terminal. Roof shown in full expanded position.

Seven Points FOR GREATER STORAGE ECONOMY

1. *Has sufficient expansion capacity to prevent breathing losses.*
2. *Maintains quality of gasoline.*
3. *Requires no maintenance attention.*
4. *Convex roof sheds water in normal or expanded positions.*
5. *Noiseless in operation.*
6. *Reduces fire hazard.*
7. *Increases profits.*

For descriptive bulletin containing interesting tables on storage losses write to Graver Tank & Mfg. Co., Inc., Dept. 18, East Chicago, Indiana.

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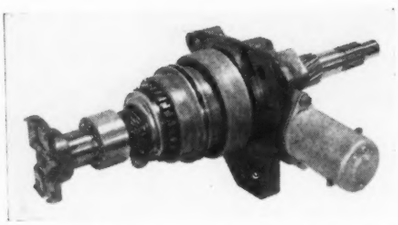
77 YEARS OF DEPENDABLE SERVICE

NEW YORK, N. Y. EAST CHICAGO, IND. CATASAUQUA, PA.

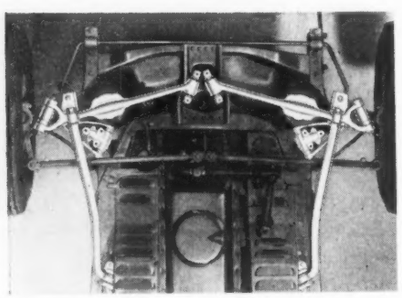
CABLE ADDRESS—GRATANK

PACKARD . . .

1940 Changes Affecting Servicing



Innards of the improved Packard "traffic" overdrive, designed to cut in at the unusually low speed of 22 m.p.h. and to return to direct drive at 17 m.p.h.—makes unit operative in comparatively slow traffic



Roll control sway bar, mounted on the front end of 1940 Packard cars is rubber bushed at the frame ends.

Lubricant Change

Frequencies Recommended By Car Manufacturers

CRANKCASE
First drain at end of 500 miles, thereafter at 1000 to 2000-mile intervals for average conditions. (Was every 2000 miles in 1939 and 2000 to 3000 miles in 1938). Recommended driving condition control frequency of change, such as driving in dusty area, hard driving in warm weather, short drives in winter weather.

TRANSMISSION
Drain and refill in spring or every 10,000 miles, conventional unit, or those equipped with overdrive, using straight transmission oil SAE 140 in warm weather, SAE 90 in cold weather and SAE 80 in extremely cold weather.

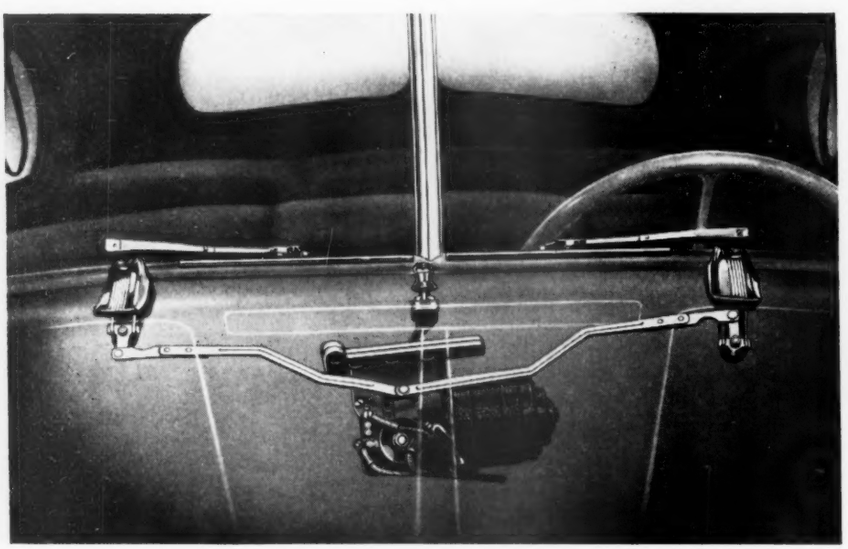
REAR AXLE
Drain and refill each fall with a special passenger car duty hypoid oil of SAE 90 viscosity using Packard-approved lubricants.

STEERING GEAR
Use SAE 140 straight transmission oil for warm weather—was SAE 140 or 160—and use SAE 90 in cold weather. Drain and refill every 10,000 miles—requires 11 oz.

Lubrication Change

CHASSIS
Complete chassis lubrication at 1000-mile intervals, was every 2000 miles in 1939.

CLUTCH SHIFTER BEARING
Packed with lubricant and permanently sealed by bearing manufacturer, this unit requires no further lubrication. (In 1939 a teaspoonful of oil was recommended if bearing becomes noisy.)



A new vacuum tandem electric windshield wiper is now standard equipment on Packard "110" and "120" series

Capacity Changes

COOLING SYSTEM
Series "110" and "120" models increased 2 qts. to 17 and 18 qts., respectively. Series "160" and "180" have capacity 20 qts.—1939 Super Eight was 22 qts.

REAR AXLE
On Series "110" models decreased to 4½ pts. (was 6 pts. in 1939).

BRAKE PEDAL AND EQUALIZER
Lubricate clutch and brake pedal bearings through a single fitting on outer end of shaft, at 1000-mile intervals. Spray hand brake equalizer with engine oil every 1000 miles.

UNIVERSAL JOINTS
Lubricate slip yoke spline at forward end of propeller shaft with pressure gun grease at 1000-mile intervals. (Was 2000 mile point in 1939.)
Universal journals should be repacked with No. 2½ cup grease every 30,000 miles —SAE 160 specified in 1939.

OIL FILTER
Optional equipment on series "110" and "120" in 1940—was standard on all 1939 models. Change filter cartridge every 8000 miles—"in no case should it be used beyond 10,000 miles."

Mechanical Changes

Two new series added to line to take place of two series discontinued. New "160" replaces 1939's Super 8 and the "180" replaces the Packard 12 — both driven by new 160 hp straight eight engine.

OIL FILTER
Two-stage filter standard equipment on series "160" and "180" models, filters oil supplied hydraulic valve lifters—new on Packard this year—and acts as by-pass filter for remainder of engine.

OVERDRIVE
Optional on all models, improved unit uses same gear arrangement but a new method of control which cuts the overdrive in at a road speed of 22 m.p.h. Return to third gear is automatic when car slows to speed below 17 m.p.h. Red indicator light on instrument panel lights when car has passed cut-in speed as signal to driver that overdrive can be used. The unit, in common with other improved types, permits car to be put in direct drive above overdrive speed by pushing foot throttle through wide-open position.

REAR AXLE
Series "110" models have a lighter rear axle, reducing capacity of gear housing.

SHACKLES
Rubber-cored shackles on rear springs have a new gooseneck spring-steel mounting. Rear springs have two rubber inserts and three fabric inserts, and one lead insert between leaves to improve riding qualities—springs should not be lubricated.

WINDSHIELD WIPER
New vacuum tandem electric wiper mechanism standard on series "110" and "120". Vacuum tandem and booster used on "160" and "180" series.

A Fall Magnet THAT "PULLS THEM IN"!

Grantland Rice Football Guide and Cities Service Winter Conditioning — Two Timely "Keys To Profit" for Cities Service dealers.

HERE'S COMPLETE WINTER PROTECTION FOR YOUR CAR

Cities Service is telling the story in Saturday Evening Post, Life, and in your newspaper

. . . and 16,000 Cities Service Dealers are cashing in right now. Here's what we mean by *complete Winter protection the Cities Service way.*

1. Winter-grade CITIES SERVICE or KOOLMOTOR Motor Oil. We drain, flush and refill the crankcase with your choice of these HEAT-PROVED motor oils.
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4. The proper quantity of Koldpruf Anti-Freeze. This includes our complete drain and flush radiator service.
5. A complete SAFETY CHECK of your car. We check and service your tires, your battery . . . every part of your car to help you make "Winter driving a Winter sport."

IT'S A COMPLETE PROTECTION SERVICE . . . A PROFIT-MAKER AND A BUSINESS-BUILDER FOR THE CITIES SERVICE DEALER.

● This fall additional thousands of motorists are going to be attracted to Cities Service stations by these two timely "Keys To Profit."

The first is the new edition of Grantland Rice's — Cities Service Football Guide, eagerly sought by sport fans the country 'round. Second is the Cities Service exclusive Winter conditioning for cars, a service that attracts wise motorists because it offers full Winter protection at nominal costs. Find out all about these two—and other—features of the complete Cities Service "Keys To Profit" campaign for 1939. Get in touch with the nearest office listed below.

FOR YOUR ENJOYMENT:

Grantland Rice Football Chats on the Hour of Stars—Cities Service Radio Concert — with Lucille Manners, Ross Graham, Frank Black and the Cities Service Orchestra and Singers—Friday evening at 8 P.M., E.S.T. over the NBC Red Network.

CITIES SERVICE

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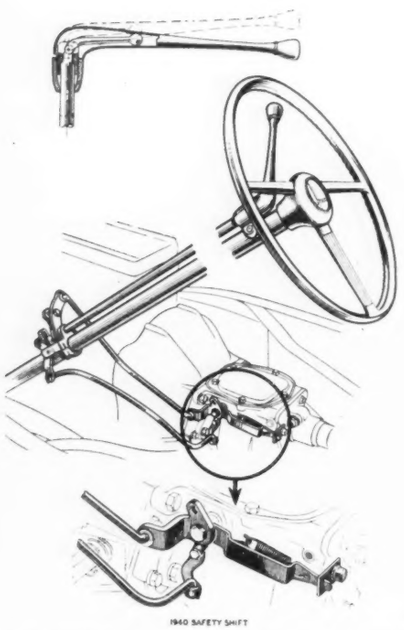


Rod control replaces cable selector used in 1939 by Pontiac. Linkage in circle requires mineral oil or grease lubricant. Steering gear end of rods, with rubber insulators, requires lubrication with castor oil if squeak develops

PONTIAC . . .

1940 Changes Affecting Servicing

Capacity Changes

CRANKCASE

Eight-cylinder models 6 qts. (was 7 qts.)

Lubricant Change

Frequencies Recommended By Car Manufacturers

Every 2000 to 3000 miles under normal driving conditions. More frequent changes recommended for adverse conditions, such as driving over dusty roads, short runs in cold weather, or hard driving at high speeds.

TRANSMISSION

Drain and refill twice yearly or every 10,000 miles with S.A.E. 90 E.P. gear lubricant. Regular gear lubricant (not E.P.) may be used: SAE 140 for temperatures of 60 degrees Fahr. and above, SAE 90 for below this temperature. Check oil and maintain fluid level, every 1000 miles. Do not use hypoid lubricant.

REAR AXLE

Drain and refill with SAE 90 passenger car duty hypoid gear lubricant, every 10,000 miles or twice yearly. Check and maintain fluid level every 1000 miles. Use only specified lubricant.

Lubrication Change

REAR SPRINGS

Equipped with canvas lined metal covers, rear springs require lubrication every six months or 10,000 miles with graphite grease (No. 2½ cup grease to which has been added 40% or 50% of graphite.) 1940 recommendations say a suitable type viscous chassis grease may also be used for this purpose.

GEARSHIFT MECHANISM

Lubricate gear shift control rod and selector rod at transmission end only with mineral oil or grease—rod arrangement replaces cable control used in 1939. Do not use oil or grease to lubricate upper end of these rods. If squeak develops at steering gear end of control rod when gears are shifted in cold weather, lubricate rubber insulator with castor oil.

DISTRIBUTOR

1940 recommendations call for use of light engine oil on rotor wick—not specified in 1939—in addition use of petroleum jelly on distributor cam, and No. 2½ cup grease on shaft. These services required every 1000 miles.

Mechanical Changes

1940 line adds a new eight-cylinder model, called the Torpedo Eight.

GEARSHIFT MECHANISM

A rod replaces cable selector used in 1939. Control lever operates through a ball socket, with the ball seated in a self-lubricated fabric bushing. Gear-selecting mechanism enters transmission from side. Spring tension on "locating balls" reduced from 12 to 8 pounds to make shifting easier.

GENERATOR

A new shunt-wound generator one inch longer than in 1939 provides increased electrical load required by sealed beam headlights. Current output is increased 28 per cent at 35 m.p.h. and 50 per cent at 60 m.p.h. A current regulator and voltage regulator maintains output at 26 amperes.

ENGINE

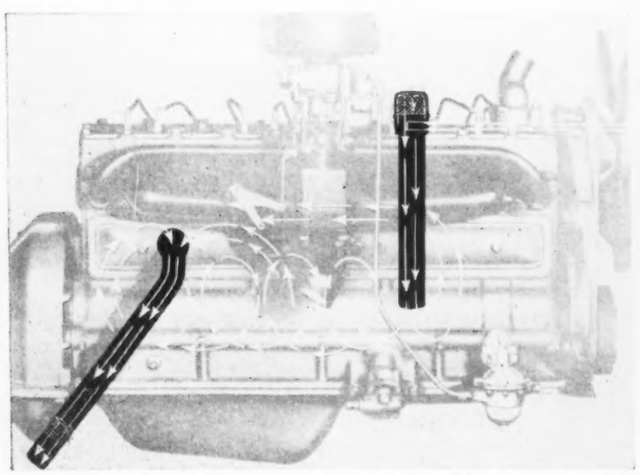
Spark plugs located directly over intake valves to eliminate spark knock and increase volumetric efficiency of six-cylinder engines. Compression ratios now 6.50 to 1, compared 6.20 to 1 in 1939.

GASOLINE FILTER

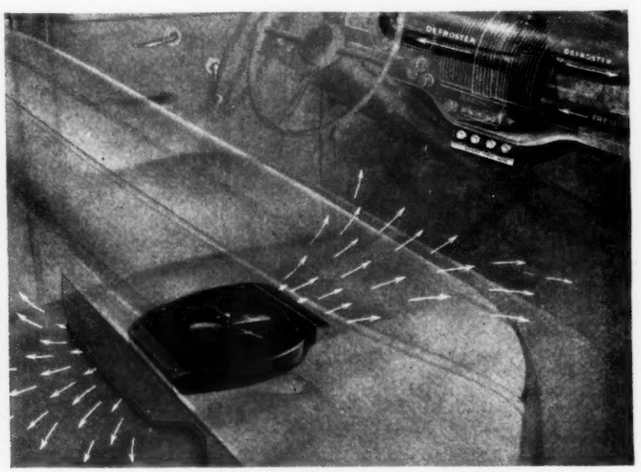
A filter made of a stack of thin perforated brass rings replaces 180 per inch mesh screen in fuel pump to keep impurities from collecting and clogging carburetor jets.

KING PINS

Floating upper and lower king pins adopted to provide uniformity in low-friction bearing conditions. Bushings now have bearing on both inside and outside surfaces.



Pressure-suction ventilation in engine of 1940 Pontiac eight. A filter of copper ribbon has been added to ventilator outlet to prevent dust from entering the engine of parked cars



Central heating plant available as accessory equipment on 1940 Pontiac offers 20 to 50 per cent more capacity than former dash heaters. Unit incorporates special defroster and fresh air intake

PLYMOUTH–DODGE . . .

1940 Changes Affecting Servicing

Lubricant Change

Frequencies Recommended By Car Manufacturers

CRANKCASE, TRANSMISSION AND REAR AXLE
Recommendations identical with those for Chrysler and De Soto.

Lubrication Change

NOTE
Lubrication requirements of the 1940 Plymouth and Dodge are identical.

FRONT WHEEL SUSPENSION
Lubrication fitting on front of lower control arm pivot bushing discontinued—bushing drilled so lubricant applied to rear fitting lubricates bushing both front and rear—eliminates two fittings requiring semi-fluid lubricant at 1000-mile intervals. Change was made on some late 1939 cars.

GENERATOR
Two oil cups continue to require 10 drops of light engine oil at 6000-mile intervals. (Lift front cover, slide rear cover.)

REAR WHEEL BEARING
Remove plug, insert fittings, inject ½ ounce of short fibre wheel bearing lubricant and replace plug. (No quantity specified in 1939.)

OIL FILTER
Standard on Roadking as well as Deluxe models. Change at 8000-mile intervals under normal driving conditions.

Capacity Changes

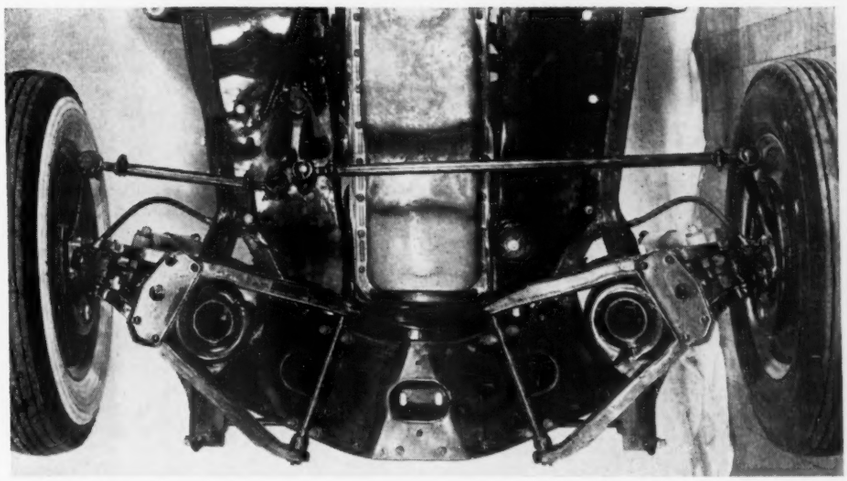
Transmission capacity standardized on all models at 2¾ pts (was 2¼ pts in 1939.) Gasoline tank all models 17 gal. (was 18 gal.) Other capacities unchanged from 1939.

Mechanical Changes

1940 line includes Plymouth Roadking and Deluxe models, Dodge Special and Deluxe Luxury Liners. All are identical in most mechanical details.

FRONT WHEEL SUSPENSION
Has been redesigned on all models to change angle of the support arms with reference to frame—line of action rotated toward rear.

TRANSMISSION
Conforms to new standardized size adopted for all Chrysler-made cars. Housing is longer with a casting attached at rear, same design as Chrysler and De Soto models which permits addition of overdrive unit, although this unit is not available on Plymouth or Dodge.
Features new type of synchronizer, new tooth pointing and wider teeth on first and reverse gears to make them silent. Controls enter case through left side instead of top.



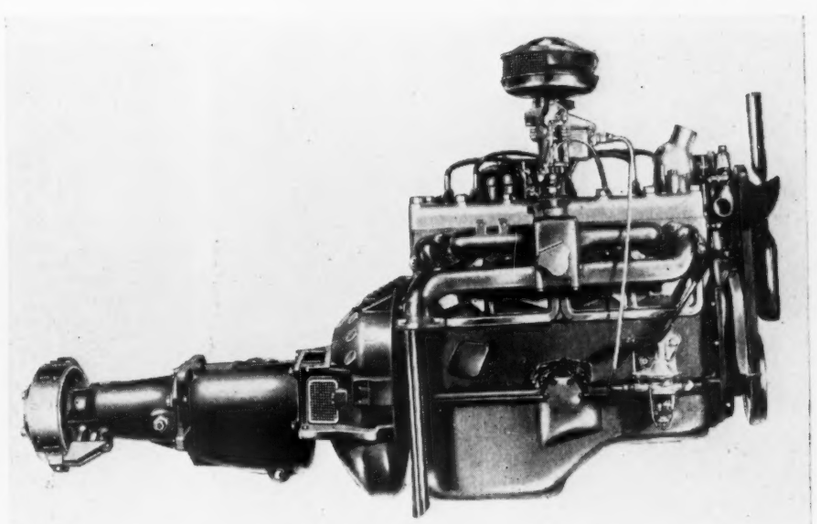
Independent front wheel springing on all Chrysler lines redesigned, with centerline of wishbone at an acute angle to the centerline of the chassis—effect is to move front axles 4 inches to rear, improving riding qualities

GEARSHIFT
Steering column shift mechanism is standard on all 1940 models (was not available on Plymouth Roadking in 1939.) Plymouth uses new external type with control arm outside the steering column—no lubrication required. Dodge uses same type as 1939—inside column.

CHASSIS
Axles, seats and engine relocated on all models, although overall length and frame length unchanged. Rear axle is back 7½ inches, front axle is back 4 inches—see change in front wheel suspension—making wheelbase 3½ inches longer and permitting use of rear doors on sedan models which require no cutout to clear the rear fender.

GENERATORS
Improved type, with voltage regulator to maintain higher capacity of 35 amperes required by sealed beam headlights.

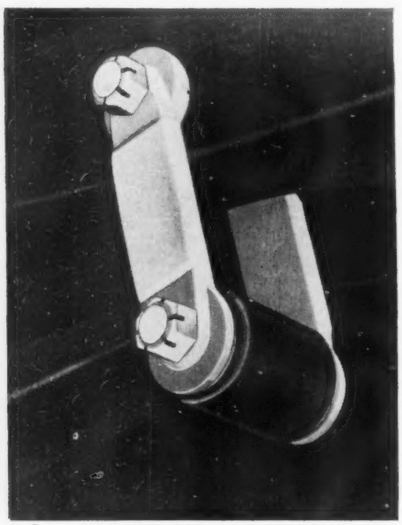
WARNING LIGHTS
Standard on all instrument boards of Chrysler line signal lights indicate when gasoline supply is low, oil pressure down, ammeter discharge excessive or cooling temperature too high.



Power plants on 1940 Plymouths, feature 84-hp at 3600 r.p.m.—up 2-hp from 1939—and aluminum pistons "stannic coated" with pure tin. Oil filters are now standard equipment on all models—only deluxe in 1939. View shows new transmission—standardized as to size for all Chrysler cars—with shifts on side instead of top

STUDEBAKER . . .

1940 Changes Affecting Servicing



Rubber bushed spring shackles replaced threaded "U" type on rear springs of all 1940 Studebakers, eliminating six lubrication points

Capacity Changes

NO CHANGE OVER 1939

Lubricant Change

Frequencies Recommended By Car Manufacturers

CRANKCASE
At the end of first 500 miles, again at 1500 miles. After this period change regularly, "the frequency depending on condition of the oil as affected by operating and atmospheric temperatures." Under normal driving conditions change at 2500 to 3000 miles. Adverse factors calling for more frequent oil changes are dust storms, short runs in cold weather with frequent stops and starts.

TRANSMISSION
Conventional: Drain, flush and refill every 10,000 miles with SAE 90 gear lubricant summer and winter.
Overdrive: Use only "High Grade Mineral Oil Gear Lubricant SAE 90 grade summer and winter. If not available use SAE 70 engine oil in summer and SAE 50 engine oil in winter."

REAR AXLE
Drain, flush and refill every 10,000 miles with SAE 90 hypoid lubricant. "Use Studebaker Hypoid lubricant or any hypoid lubricant (SAE 90) manufactured by a reputable oil company." Flush with light engine oil. Do not mix lubricants.

Lubricant Change

REAR SPRINGS
Rubber bushed shackles replace threaded "U" type on all models—eliminate on six lubrication fittings. Springs all models metal covered, require special graphite lubricant every 10,000 miles.

UNIVERSAL JOINT
Repack these points front and rear with chassis lubricant at 5000-mile intervals—was every 10,000 miles in 1939. (These points should be serviced by car dealer, but service station operators should warn customers of need for lubrication and change in interval.)

GEAR SELECTOR BOX
Introduced on Champion models, this unit is now standard equipment on all models. Requires chassis lubricant at 10,000-mile intervals.

FAN AND WATER PUMP
These units on Champion line have self-adjusting packing gland which does not require lubrication. Chassis lubrication at 1000-mile intervals continues on Commander and President cars.

Mechanical Changes

REAR SPRINGS
Rubber bushed shackles replace threaded "U" type on all models. President and Commander now have 16 and 15 leaves in front springs, respectively, compared with 15 and 14 in 1939.

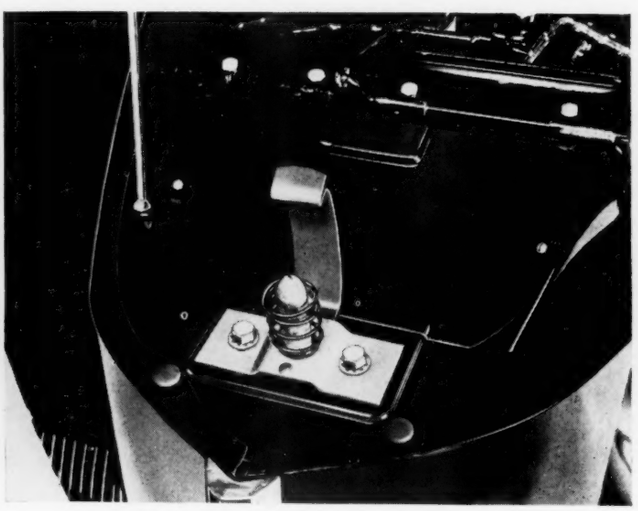
SHOCK ABSORBERS
All 1940 models are equipped with Houde shock absorbers of double acting type. Commander had one-way type in 1939.

HOOD
Alligator type hood is equipped with locking device operated from within driver's compartment. Secondary safety latch provided which must be opened from outside before hood can be raised—not included on early 1940 models.

STEERING MECHANISM
All 1940 models equipped with two steering reach rods and one tie rod—replaces single tie rod in 1939. Lubrication requirements unchanged.

TRANSMISSION
On Commander and President models transmissions returned to vertical position—formerly on side—similar to Champion. Shifting mechanism remains at side with the cross-shift taken care of by selector box at lower end of steering-column gearshift rod.

The hood-lock, standard equipment on all 1940 Studebakers, is controlled from front compartment by a lever mounted on either right or left side of steering column. After hood has been lowered, it is locked by raising lever to position shown



After hood is unlocked from inside car, it is necessary to release safety catch shown above. Early 1940 models were not factory equipped with this secondary catch, which must be pushed toward rear to release

YOU'RE 'WAY AHEAD OF TEACHER

...when it comes to gasoline!

Your customer may know history, geography and speak six languages... but she's still in kindergarten when it comes to the facts about car performance and fuel.

DID it ever strike you that the information you put into your customers' heads is just about as important as the products you put into their gas tanks and crankcases? Because if car-owners don't know a few simple facts about engine performance, they just won't appreciate the extra quality of your products.

Here's all you have to say to keep them straight on gasoline:

1. A car can't give better performance than the grade of gasoline in the tank permits. (Simple enough . . . but some people may ask "Why?")

2. That's because a mechanic can't advance the spark for more power and economy if the fuel "knocks" or "pings." (Engineers have proved that time and time again.)

THIS MONDAY NIGHT . . . Tune in **"Tune-Up Time,"** featuring Andre Kostelanetz, Tony Martin, Kay Thompson. Columbia Broadcasting System, 8 P.M., E.S.T.; 7 P.M., C.S.T.—10 P.M., M.S.T.; 9 P.M., P.S.T.

3. Different grades of fuel give different grades of performance. (Life is like that . . . you get what you pay for.)

Put these facts into your customers' minds and you won't find them shopping around for low-grade gasoline . . . and perhaps later branching out to hunt for "bargains" in oil, tires, batteries, etc. That's why we think it is sound business for you to take time out occasionally for a little selling along these lines.

YOUR CUSTOMERS HAVE THESE 3 CHOICES

BEST PERFORMANCE—with gasoline marked "Ethyl" on the pump or globe. It is highest in anti-knock and all-round quality. Contains enough tetraethyl lead so that the engine's spark can be *advanced* closest to the point of maximum power and economy without "knock" or "ping."

GOOD PERFORMANCE—with "regular" gasoline, which permits the spark to be considerably advanced without "knock" or "ping." Most "regular" gasolines now contain tetraethyl lead, as shown by the "Lead" signs on the pumps.

POOR PERFORMANCE—with low-grade gasoline, poor in anti-knock quality. With low-grade gasoline in a modern car, the engine's spark must be *retarded*—which means *loss* of power and economy.

ETHYL GASOLINE CORPORATION, *manufacturer of anti-knock fluids used by oil companies to improve gasoline*

AMERICAN BANTAM . . .

1940 CHANGES AFFECTING SERVICING

Lubricant Change

Frequencies Recommended By Car Manufacturers

CRANKCASE

Drain and refill every 2000 miles.

REAR AXLE AND TRANSMISSION

Drain and refill every 5000 miles with SAE 140 gear lubricant for temperatures above 32 degrees and SAE 90 for lower temperatures.

Capacity Changes

Late 1939 and all 1940 models have a cooling system capacity of 5½ qts. (formerly 4 qts.)

Lubrication Change

PEDAL SHAFT

Oilless bushings replace oil holes.

Mechanical Changes

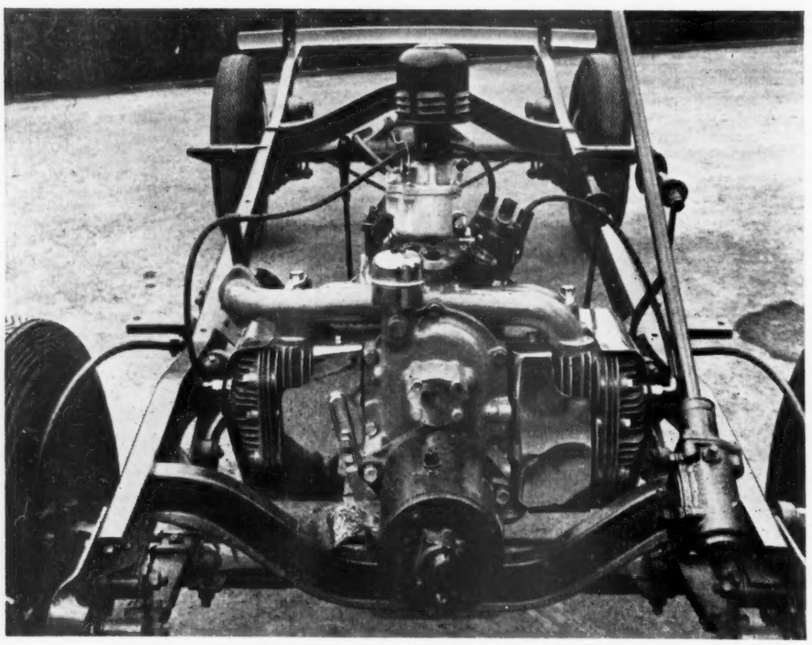
Monroe single acting shock absorbers replace friction type on all models but trucks and standard coupes.

FUEL SYSTEM

Adjustable-jet single updraft carburetor adopted for 1940. A new air filter and gasoline also included.

CROSLEY . . .

1940 CHANGES AFFECTING SERVICING



Power plant on the 1940 Crosley bantamweight automobile. The two-cylinder engine is air-cooled and develops 22 horsepower at 3800 r.p.m. Battery and gasoline tank are located under the hood

Lubricant Change

Frequencies Recommended By Car Manufacturers

Change engine oil and lubricate car at 1000-mile intervals. Drain and refill rear axle and transmission every 5000 miles with SAE 90 gear lubricant.

CAPACITIES

Remain unchanged at: Crankcase: 2 qts.; Transmission and rear axle 1 pt. each; Gasoline tank 4½ gal. No cooling system—air-cooled.

Lubrication Change

TORQUE TUBE

Lubricate center bearing of new torque tube with SAE 90 lubricant. Fill bearing until grease appears at small hole at side of bearing.

STARTING MOTOR

Lubricate rear bearing every 5000 miles with few drops of engine oil (was every 1000 miles.)

Mechanical Changes

New torque tube which provides improved hookup from engine to rear wheels.

WILLYS . . .

1940 CHANGES AFFECTING SERVICING

Lubricant Change

Frequencies Recommended By Car Manufacturers

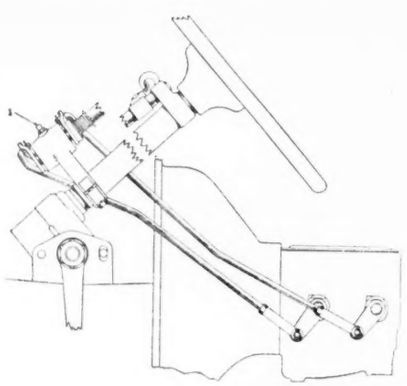
CRANKCASE

At end of first 500 miles and 1500 miles, and then every 2500 miles—2000 miles in winter—drain and refill. "The very best oils will be found more economical, for their use insures longer life to bearings and moving parts," says the Willys manual on operation and care of 1940 cars.

Removal of oil pan and oil intake and thorough washing of lower engine with kerosine recommended once a year—preferably in the spring.

TRANSMISSION

At the end of each season or each 5000 miles drain and refill with SAE 90 transmission lubricant for temperatures above —10 degrees Fahr.—Use SAE 80 for lower temperatures. Check fluid level each 1000 miles.



Steering-column located gear shift mechanism on 1940 Willys has a connector (1) which requires chassis lubricant through fitting every 1000 miles

IF YOU'RE LOOKING FOR TRUCK FEATURES . . .

Look at the FORD!

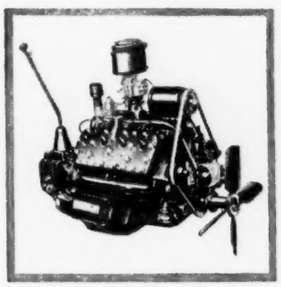
● When the Ford Motor Company speaks of truck features, it doesn't mean "gadgets." Ford features are outstanding qualities incorporated in the Ford Truck to make it tougher, more rugged, more dependable, more economical — or to make the unit easier to handle and operate, increase the driver's comfort, give added protection to the load and contribute to safety.

Shown here are a few important Ford features for 1940. There are many more which you're invited to see at your Ford dealer's. Make a note of them. Compare them with the features offered in other trucks of about the same price — or any price. Arrange for an "on-the-job" test and see what these features mean in performance and economy before you spend another truck dollar.

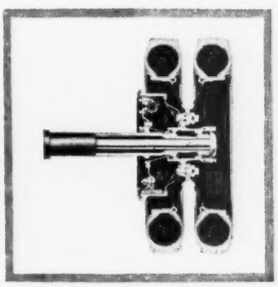
FORD MOTOR COMPANY, BUILDERS OF FORD V-8 AND MERCURY CARS, FORD TRUCKS, COMMERCIAL CARS, STATION WAGONS AND TRANSIT BUSES

AMONG THE FORD FEATURES FOR 1940

6 wheelbases, 42 body and chassis types. New Sealed-Beam Headlamps. New, larger battery —more powerful generator. Battery Condition Indicator. Worm-and-roller steering. Straddle-mounted driving pinion — ring gear thrust plate. Needle-roller bearing universal joints. Factory-installed two-speed rear axle (at extra cost). Ford Engine and Parts Exchange Plan.

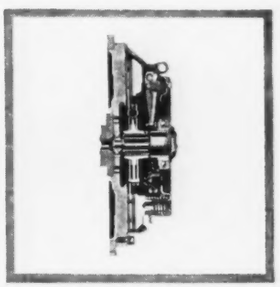


3 V-8 engines. 95, 85 and 60 hp. The only V-type, eight-cylinder truck engines on the market today.

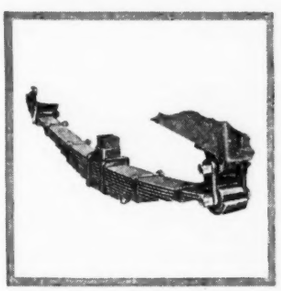


Full-floating rear axle. Relieves the axle shafts of all load stresses. Minimizes possibility of shaft failure.

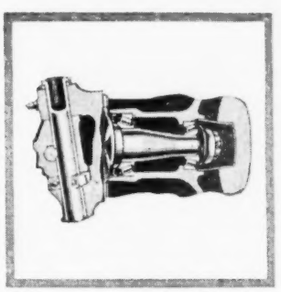
Big hydraulic brakes. Unusually large brake lining area. Dependable, built to Ford standards of safety.



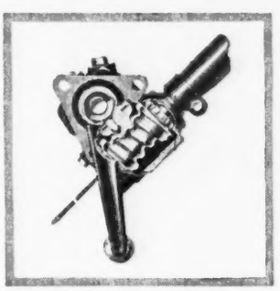
Semi-centrifugal clutch. Provides high power-transmitting capacity combined with low pedal pressure.



New front springs. Provide an additional point of support for frame side-members.



Rugged spindle bolt. Sturdy design for extra reliability. Spindle bolt has 1¼-in. diameter.



Worm and roller steering. Minimizes friction and greatly increases the ease of handling.

FORD V·8 TRUCKS

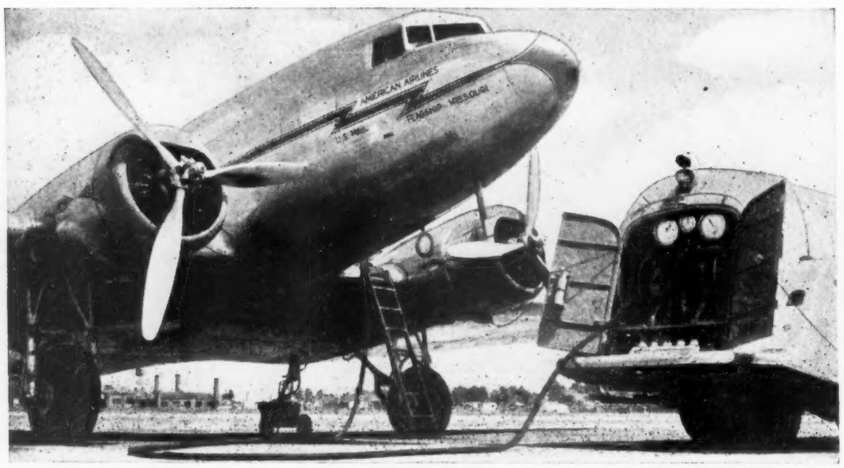
Regulars—One-Tonners—

¾-Tonners—

Cab-Over-Engine

Stream-flo

THE CHAMPION OF HOSE COUPLINGS



SUPERIORITY ESTABLISHED IN ONE YEAR!

After exhaustive laboratory and field tests, 18 leading hose manufacturers in the United States and Canada have adopted STREAM-FLO Couplings for their synthetic gasoline and oil hose.

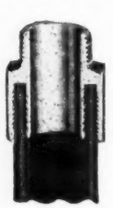
PROVED ECONOMY! FAST, EFFICIENT FUELING!

Leaks, seepage and wicking (causing hose to break down at couplings) are all prevented by STREAM-FLO Couplings. *Guaranteed* to withstand more than 500 lbs. pressure under tensile, pull or hydrostatic tests.

SPECIFY STREAM-FLO FOR SERVICE AND SAVING!

STREAM-FLO Couplings are made in all sizes from $\frac{3}{4}$" to 2". Not only do they cost much less, but assembling them to hose takes only 15 seconds.

Write for illustrated catalog and prices!



Drop forged, one-piece brass construction. Cannot slip, pull off or leak.

THE INTERNATIONAL METAL HOSE CO. INC. 10709-15 QUINCY ST. CLEVELAND, OHIO

Capacity Changes

COOLING SYSTEM

11¾ qts. (was 11.) Rear Axle: 1½ pts. (was 1¼ pts.) Gasoline tank: 10½ gal. (was 8 gal.)

REAR AXLE

Same change intervals as transmission, using mild E.P. lubricant SAE 90 for above —10 degrees and 80 for below. Avoid overfilling, as oil may leak out at wheel ends.

Lubrication Change

HAND BRAKE CONTROL

Every 10,000 miles or once a year lubricate rear emergency brake cable inside conduits with graphite grease (was every 5000 miles in 1939). Brake cable plug on front discontinued by adoption hydraulic brakes. Lubricate hand brake bearings and clevis pins with light engine oil every 1000 miles.

FAN AND WATER PUMP

Prelubricated bearing, which lasts for life of unit, replaces oil and grease lubrication point found on 1939 cars. A water circulation thermostat is added.

DISTRIBUTOR

Grease cup to lubricate shaft on 1939 cars discontinued on 1940 models.

UNIVERSAL JOINTS

In addition to 1000-mile inspection of joint boots at each end of propeller shaft, 1940 recommendations specify repacking these units at 20,000-mile intervals—also recommended for some late 1939 models.

SPRING SHACKLES

Rubber bushed shackles replace threaded "U" type on front and rear springs, eliminating 12 lubrication points.

TRANSMISSION SHIFT

On Deluxe models, chassis lubricant is required at connector located on cross shaft bracket at lower end of steering gear. Deluxe models equipped with steering column gear shift.

Mechanical Changes

ENGINE

Redesign of engines, valves, pistons and rings, decreasing clearance and increasing power output. Water jackets full length of cylinder—not in 1939. Compression ratio increased 5.70 to 6.48 to 1.

CHASSIS

Front springs formerly shackled at rear now at front. All springs shackled with rubber bushings, replacing threaded "U". Rear axle gear ratio increased from 4.1 to 1 in 1939 to 4.3 on Speedway and 4.55 on Deluxe. Steering ratio was 13 to 1, now 16.4 to 1.

BRAKES

Hydraulic brakes replace mechanical type used in 1939.

SHOCK ABSORBERS

Fluid capacity front, increased from 3¾ oz. to 4¾ oz., and on rear from 4¼ oz. to 5½ oz.

Driving Temperatures in Place of Seasons Govern Oil Changes

Temperature Ranges For Motor Oil Changes As Recommended by Car Manufacturers

When Atmospheric Temp. Fahr. is—

	Above				Below
Make of Car	90 S.A.E.	+32 S.A.E.	+10 S.A.E.	—10 S.A.E.	—10 S.A.E.
American Bantam	40	30	20	10	10
Buick	20	20, 20 W	20 W	10 W	10 W + 10% Kero.
Cadillac	30	20, 20 W	20 W	10 W	10 W + 10% Kero.
Chevrolet	30	20*, 20 W	20 W	10 W	10 W + 10% Kero.
Chrysler	40	30	20 W	10 W	10 W + 10% Kero.
Crosley	50	40	30	30	
De Soto	40	30	20 W	10 W	10 W + 10% Kero.
Dodge	40	30	20 W	10 W	10 W + 10% Kero.
Ford-Mercury	40	30	20, 20 W	10, 10 W	10 W + 10% Kero.
Hudson	30	20	20 W	10 W	10 W + 10% Kero.
La Salle	30	20, 20 W	20 W	10 W	10 W + 10% Kero.
Lincoln	40	30	20, 20 W	10 W	10 W + 10% Kero.
Nash			See footnote **		
Oldsmobile	30	20, 20 W	20 W	10 W	10 W + 10% Kero.
Packard	40	30	20 W	10 W	10 W + 10% Kero.
Plymouth	40	30	20 W	10 W	10 W + 10% Kero.
Pontiac			See footnote ***		
Studebaker	40	30	20	10	10
Willys	30	20, 20 W	20 W	10 W	10 W + 10% Kero.

*Recommends use of 20 W rather than S.A.E. 20, if it is anticipated temperature will drop to freezing.

**Nash recommends S.A.E. 30 temperature 80° to 110°; S.A.E. 20, 40° to 80°; S.A.E. 10 W, —10° to 40°, S.A.E. 10 W + 10% Kerosine, —10° to —35°.

***Pontiac says use following for easy starting: S.A.E. 20 or 20 W, temperatures 32° to 110°; S.A.E. 20 W, temperature 10° to 110°; S.A.E. 10 W, temperature —10° to 70°; S.A.E. 10 W + 10% kerosine —30° to 20°.

• Most automobile manufacturers have adopted a uniform practice of basing motor oil viscosity recommendations on a range of atmospheric temperatures at which the vehicle is expected to operate between drain periods.

This is in accord with the standard temperature ranges set up by the Society of Automotive Engineers, in cooperation with representatives from the oil companies, to cover average driving temperature conditions. These ranges take the place of the former practice of recommending merely "summer" and "winter" changes of lubricants and their use has advantages for both oil companies and the car manufacturers. The ranges are:

1—When the lowest expected temperature is less than —10 Fahr.

2—When the lowest expected temperature is —10 Fahr.

3—When the lowest expected temperature is +10 Fahr.

4—When the lowest expected temperature is +32 Fahr.

5—When the expected daytime temperature is +90 Fahr. or over.

The scientists who worked out these ranges of atmospheric driving temperatures point out that two viscosities of motor oil will still take care of the needs of most automobile engines in any particular section of the country.

The oil company lubrication engineers say, however, that emphasizing the importance of the temperatures in which the car will be driven can be used by service station salesmen as arguments for oil changes. At the present time, for example, the motorist may need an oil change according to his speedometer reading but he may not have the proper grade in his crankcase for the temperature in which he is driving. The use of the temperature ranges is an added argument in selling Winter Change-Over, with its change of crankcase oil, early in the fall, in place of waiting until real winter weather comes on.

The accompanying chart shows the S.A.E. viscosities of motor oil which individual manufacturers specify should be used for these temperature ranges. A trend toward uniformity of motor oil recommendations is indicated.

However, in owners' manuals prepared for the new car purchaser, Nash and Pontiac suggest temperature ranges which vary somewhat from temperature ranges suggested by the S.A.E.

Pontiac says that for temperatures ranging between 32 and 110 degrees, use S.A.E. 20 or 20W; for temperatures which go as low as 10 degrees or as high as 110°, use S.A.E. 20W; for temperatures between —10° and 70°, use 10-W; and for temperatures in the range of —30° to 20°, use 10-W plus 10 per cent kerosine.

It is pointed out that the lowest temperature shown for each grade is the lowest at which easy starting can be expected when that grade is used. Also that 10-W plus 10 per cent kerosine is recommended only for territories when the temperature falls below —10° for protracted periods. S.A.E. 30 oil is recommended when it is expected that average daytime temperature will be 90° or higher.

Nash says: "Determine the lowest expected weather temperature, during period that oil will be in engine," then for temperatures above 80°, use S.A.E. 30 engine oil; for temperatures 40° to 80°, use S.A.E. 20; for temperatures from —10° to 40°, use S.A.E. 10-W; and for temperatures from —35° to —10°, use S.A.E. 10-W plus 10 per cent kerosine.

Analysis of viscosity recommendations for all cars illustrates that there is considerable latitude in interpretation of the proper grade to be used for the various temperatures. A grade oil recommended for one range of temperatures may be used for temperatures slightly higher or lower than the limits of this range.

Although transmission and rear axle lubricants are also recommended according to operating temperature ranges by most car manufacturers, these temperatures vary with the individual manufacturers and the recommended grades of lubricants to be used in these parts are shown with details of individual 1940 car models on preceding pages of this issue.

1940 Passenger Car Capacity Chart

Capacities of crankcase, transmission, differential, rear axle and radiator for all new models; also tire sizes and recommended tire pressures.

MAKE OF CAR	MODEL	CAPACITIES						TIRES		
		CRANKCASE Qts.	TRANSMISSION PTS.		REAR AXLE PTS.	RADIATOR QTS.	GASOLINE TANK GALS.	SIZE	PRESSURE	
			STD.	T.O.					FRONT	REAR
AMERICAN BANTAM	65	3	1¼		1¼	5½	5	4.00 x 15 5.00 x 15	24 18	24 20
BUICK	Special 40-40	6	1¾	●	3	12½(b)	17	6.50 x 16	Cold 25 Hot 27	Cold 30 Hot 34
BUICK	Super 40-50	6	1¾	●	3	12½(b)	17	6.50 x 16	Cold 25 Hot 27	Cold 30 Hot 34
BUICK	Century 40-60	8	2½	●	3	16(b)	17	7.00 x 15	Cold 25 Hot 27	Cold 30 Hot 34
BUICK	Roadmaster 40-70	8	2½	●	3	16(b)	17	7.00 x 15	Cold 25 Hot 27	Cold 30 Hot 34
BUICK	40-80	8	2½	●	4	18(b)	19	7.50 x 16	Cold 25 Hot 27	Cold 30 Hot 34
BUICK	40-90	8	2½	●	4	18(b)	19	7.50 x 16	Cold 25 Hot 27	Cold 30 Hot 34
CADILLAC	(60S)—(V-8) (62)—(V-8)	7	2½	●	5	24½	22	7.00 x 16	28	28
CADILLAC	72—V-8	7	2½	●	6½	24½	24	7.50 x 16	28	28
CADILLAC	(75)—V-8	7	2½	●	6½	24½	26	7.50 x 16	32	32
CADILLAC	(90)—V-16	11	2½	●	6½	30	26	7.50 x 16	32	32
CHEVROLET	Master 85 Master Deluxe Special Deluxe	5	1½	●	3½	14	16	6.00 x 16	26	28
CROSLEY	Two Cylinder	2	1	●	1	Air Cooled	4	4.50 x 12	24	24
CHRYSLER	Royal Six	5	2¾	●	3¼	18	17	6.25 x 16	28	28
CHRYSLER	Royal Windsor	5	2¾	4(h)	3¼	18	17	6.25 x 16	28	28
CHRYSLER	Traveler	6	2¾	●	3¼	24	20	6.50 x 16	30	30
CHRYSLER	New Yorker	6	2¾	4	3¼	24	20	7.00 x 15	28	28
CHRYSLER	Saratoga	6	2¾	4	3¼	24	20	7.00 x 15	28	28
CHRYSLER	Crown Imperial	6	—	(Std.) 4	4½	24	20	7.50 x 15	28	28
DE SOTO	Six	5	2¾	4	3¼	17	17	6.00 x 16	28	28
DODGE	Special, Deluxe	5	2¾	●	3¼	15	17	6.00 x 16	28	28
	60 H.P.	5	2¾	●	2½	16	15	5.50 x 16	30	30
FORD	De Luxe	5	2¾	●	2½	22	15	6.00 x 16	30	30
FORD	Mercury	5	2¾	●	2½	21	17	6.50 x 16 6.00 x 16	26 30	26 30
HUDSON	Six (Traveler)	4½	2¼	3	2¾	13	12½	5.50 x 16	Cold 26 Hot 29	Cold 30 Hot 33
HUDSON	Deluxe Six & Super Six	4½	2¼	3	2¾	13	12½ Super Six 16½	6.00 x 16	Cold 26 Hot 29	Cold 30 Hot 33

1940 Passenger Car Capacity Chart

(Continued from preceding page)

MAKE OF CAR	MODEL	CAPACITIES						TIRES		
		CRANKCASE Qts.	TRANSMISSION PTS.		REAR AXLE PTS.	RADIATOR QTS.	GASOLINE TANK GALS.	SIZE	PRESSURE	
			STD.	T.O.					FRONT	REAR
HUDSON	Country Club Six	4½	2¼	3	2¾	13	16½	6.25 x 16	Cold 26 Hot 29	Cold 30 Hot 33
HUDSON	Eight	7	2¼	3	2¾	18	16½	6.00 x 16	Cold 26 Hot 29	Cold 30 Hot 33
HUDSON	Country Club Eight	7	2¼	3	2¾	18	16½	6.50 x 16	Cold 26 Hot 29	Cold 30 Hot 33
LA SALLE	V-8 (50 & 52)	7	2½	●	5	25	22	7.00 x 16	24	24
LINCOLN	(V-12) Zephyr	5	2¾	●	4(a)	27	19.5	7.00 x 16	28	28
NASH	Lafayette Six	6	3½	6	4	18(c)	20	6.00 x 16	28	28
NASH	Ambassador Six	6	3½	6	4	16½(c)	20	6.25 x 16	27	27
NASH	Ambassador Eight	7	3½	6	5	17(c)	20	7.00 x 15	26	26
OLDSMOBILE	Six (60)	5	2	(d)	2½	18	17	6.00 x 16	27	27
OLDSMOBILE	Six (70)	5	2	(d)	2½	18	17	6.50 x 16	25	25
OLDSMOBILE	Eight (90)	6	2	(d)	2½	21	17	7.00 x 15	26	26
PACKARD	110 Six	5	2	1¼(x)	4½	17	17	6.25 x 16	26	28
PACKARD	Eight in line 120	6	2	1¼(x)	6	18	21	6.50 x 16	26	28
PACKARD	Eight in line 160 & 180	8	2	1¼(x)	6	20	21	7.00 x 16	27	29
PLYMOUTH	Road King	5	2¾	●	3¼	14	17	5.50 x 16	32	32
PLYMOUTH	Deluxe	5	2¾	●	3¼	14	17	6.00 x 16	28	28
PONTIAC	Special Six	6	1¾	●	3	17	16	6.00 x 16	28	30
PONTIAC	Deluxe Six	6	1¾	●	3	17	16	6.00 x 16	28	30
PONTIAC	Deluxe Eight	6	1¾	●	3	19½	16	6.50 x 16	28	30
PONTIAC	Torpedo Eight	6	1¾	●	3	19½	16	6.50 x 16	28	30
STUDEBAKER	Champion	5	1	2½	2½	10½	15	5.50 x 16	26	26
STUDEBAKER	Commander	6	2½	4	3	14½	18	6.25 x 16	30	30
STUDEBAKER	President	8	2½	4	3	17½	18	6.50 x 16	30	30
WILLYS-OVERLAND	De Luxe	4	1	●	1½	11¾	10½	5.50 x 16	26	26
WILLYS-OVERLAND	Speedway	4	1	●	1½	11¾	10½	5.00 x 16	28	28

T.O. Equipped with transmission overdrive.

(a) Lincoln equipped with two-speed rear axle has differential capacity 5 pts.

(b) Add 1⅜ quart to capacity 40-50, 60, 70 Series equipped with Buick Hot water heater.

(c) Add 1 quart when equipped with Weather-eye heater.

(h) Available on Royal Windsor only.

(d) Oldsmobile equipped with Hydra-Matic Drive, requires 10 quarts special fluid in the system—replaces conventional transmission—available on all models.

(x) Packard overdrive has separate housing.

Mr. President.. ☐
Mr. General Mgr..... ☐
Mr. Sales Mgr.. ☐
Mr. Service Mgr..... ☐
Mr. Lubrication Mgr..... ☐

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Compression Ratio Trend Upward on the '40 Models

Engineering improvements and new power plant design introduced on numerous 1940 passenger cars caused an upward boost in the average compression ratio and horsepower rating. as compared with 1939. Further indication of this trend is reflected in an even higher average of optional compression ratios available to the new car purchaser.

For 45 individual models, the average compression ratio offered as standard equipment is 6.40 to 1, as against 6.30 to 1 for 49 models in 1939. Average of optional ratio was "upped" from 6.39 to 1 in 1939, to 6.59 to 1, this year.

Average horsepower rating of all 1940 models is 109.0 at 3567 r.p.m., compared to 108.0 at 3520 r.p.m. in 1939.

Hudson took the lead for maximum compression ratio with 7.00 on its series "112", which was 6.50 in 1939, and raised the compression on other models from 6.25 to 6.50.

Ford raised the ratio on the 60-h.p. V8 to 6.60, after lowering it, in 1939 to 6.50. Oldsmobile, on the "60" series, dropped back to the 6.10 ratio used in 1938, and the Packard Six was lowered to 6.39, against 6.52 in 1939 and the year before.

All Pontiac models feature a revision in combustion chamber which raises the compression ratio from 6.20 to 6.50, and Willys offers a standard ratio of 6.48 in 1940, compared to 5.70 in 1939.

Important changes in horsepower rating are offered in 1940, as a result of improved or new engine design. These include all models of Chrysler, De Soto, Plymouth, Hudson, LaSalle, Lincoln-Zephyr, Willys, and the Pontiac 6-cylinder models. The Oldsmobile "60" series is now powered by the same 6-cylinder, 95-horsepower engine used in the "70" series. In 1939 the rating on this car was 90-h.p.

In most respects the higher power rating resulted from changes in carburetion, valve lift action, reduction in changes of combustion chamber, or increase in cylinder bore.

Chrysler uses a new high-lift cam-

(*Continued on page* 67)

Compression Ratios and Maximum Horsepower Ratings of 1940 and 1939 Passenger Cars

Make and Model	1940 Compression Ratio Std.	1940 Compression Ratio Opt.	1939 Compression Ratio Std.	1939 Compression Ratio Opt.	1940 Horsepower H.P.	1940 R.P.M.	1939 Horsepower H.P.	1939 R.P.M.	1940 Piston Displacement (Cubic Inches)	1939 Piston Displacement (Cubic Inches)
Buick 40	6.10	....	6.10	....	107	3400	107	3400	248	248.0
Buick 50	6.10	....	....	....	107	3400	....	....	248	.....
Buick 60	6.25	....	6.25	....	141	3600	141	3600	320.2	320.2
Buick 70	6.25	....	....	....	141	3600	....	....	320.2	.....
Buick 80	6.25	....	6.25	....	141	3600	141	3600	320.2	320.2
Buick 90	6.25	....	6.25	....	141	3600	141	3600	320.2	320.2
Cadillac V-8 61	6.25	5.75–6.70	6.25	6.70–5.75	135	3400	135	3400	346.0	346.0
Cadillac V-8 60S	6.25	5.75–6.70	6.25	6.70–5.75	135	3400	135	3400	346.0	346.0
Cadillac V-8 75	6.70	6.25–5.75	6.70	6.25–5.75	140	3400	140	3400	346.0	346.0
Cadillac V-16 90	6.75	6.25–5.75	6.75	6.08	185	3600	185	3600	431.0	431.0
Chevrolet Master 85	6.25	....	6.25	....	85	3200	85	3200	216.5	216.5
Chevrolet Master De Luxe	6.25	....	6.25	....	85	3200	85	3200	216.5	216.5
Chrysler-Royal C-22	6.50	7.00	6.50	7.00	108	3600	100	3600	241.5	241.5
Chrysler-Imperial C-23	6.80	7.45	6.80	7.45	135	3400	130	3400	323.5	323.5
Chrysler-Cust. Imp. C-24	6.80	....	6.80	....	135	3400	130	3400	323.5	323.5
De Soto	6.50	7.00	6.50	7.00	100	3600	93	3600	228.1	228.1
Dodge	6.50	....	6.50	....	87	3600	87	3600	217.8	217.8
Ford V8-60	6.60	....	6.50	....	60	3500	60	3500	136.0	136.0
Ford V8-85 De Luxe	6.15	....	6.15	....	85	3800	85	3800	221.0	221.0
Hudson 112	7.00	....	6.50	....	92	4000	86	4000	175.0	175.0
Hudson Six	6.50	....	6.25	....	102	4000	96	3900	212.0	212.0
Hudson Country Club 6	6.50	....	6.25	....	102	4000	101	4000	212.0	212.0
Hudson Country Club 8	6.50	....	6.25	....	128	4200	122	4200	254.0	254.0
La Salle-V8	6.25	....	6.25	....	130	3400	125	3400	322.0	322.0
Lincoln Zephyr	6.70	....	6.70	....	120	3900	110	3900	292.0	267.0
Mercury 8	6.15	....	6.15	....	95	3600	95	3600	239.0	239.0
Nash-LaF. Spec. and DeL	6.30	....	6.30	....	99	3400	99	3400	234.8	234.8
Nash-Ambassador 6	6.00	....	6.00	....	105	3400	105	3400	234.8	234.8
Nash-Ambassador 8	6.00	....	6.00	....	115	3400	115	3400	260.8	260.8
Oldsmobile-Six 60	6.10	5.61	6.20	5.67	95	3400	90	3200	229.7	216.0
Oldsmobile-Six 70	6.10	5.61	6.10	5.61	95	3400	95	3300	229.7	229.7
Oldsmobile-Eight	6.20	5.80	6.20	5.80	110	3600	110	3500	257.1	257.1
Packard Six	6.39	6.71	6.52	6.85	100	3200	100	3200	245.3	245.3
Packard Eight	6.41	6.85	6.41	6.85	120	3600	120	3600	282.0	282.0
Packard Super Eight	....	....	6.45	6.85	....	....	130	3200	.....	320.0
Packard Twelve	....	....	6.30	7.03	....	....	175	3200	.....	473.0
Packard 160+180	6.45	6.85	....	....	160	3500	....	....	356.0	.....
Plymouth Roadking	6.70	7.00	6.70	7.00	84	3600	82	3600	201.3	201.3
Plymouth De Luxe	6.70	7.00	6.70	7.00	84	3600	82	3600	201.3	201.3
Pontiac Quality 6	6.50	7.20	6.20	....	87	3500	85	3520	222.7	222.7
Pontiac De Luxe 6	6.50	7.20	6.20	....	87	3500	85	3520	222.7	222.7
Pontiac De Luxe 8	6.50	7.20	6.20	....	100	3700	100	3700	248.9	248.9
Pontiac Torpedo 8	6.50	7.20	....	....	103	3700	....	....	248.9	.....
Studebaker Champion 6	6.50	....	....	....	78	4000	....	....	164.3	.....
Studebaker Com. Six	6.00	7.00	6.00	7.00	90	3400	90	3400	226.0	226.0
Studebaker Pres. 8	6.00	6.50	6.00	6.50	110	3600	110	3600	250.4	250.4
Willys	6.48	6.81–7.00	5.70	....	61	3600	48	3200	134.2	134.2
Average	6.40	6.59	6.32	6.39	109	3567	108	3520	258.4	260.6

More Frequent Oil Changes Urged By Car Makers

THE motorist is his car's worst enemy, and the oil industry's efforts to provide proper lubrication have been handicapped by his tendency to drive longer periods between oil changes, without consideration of conditions under which his car has been operating.

This is especially true for winter driving, when frequent stops and starts lead to contamination and dilution of the oil and make more frequent changes necessary.

This tendency to over-drive motor oil, which is the result of exaggerated oil economy claims by car salesmen, some car manufacturers and in some instances by refiners of lubricating oils, started about seven years ago. Recently, however, the trend to encourage longer drain periods has stopped, and, in the case of two automobile manufacturers, has about faced.

Oldsmobile has reduced its recommended normal oil drain period for 1940 models from 2000 to 3000 miles, to 1000 miles flat. Packard recommends 1000 to 2000-mile changes, a reduction from the 1939 recommendation of 2000 miles flat.

The Oil Change Committee of the oil industry, which has been studying why crankcase oil should be changed regularly points out the effect of contamination and dilution of motor oil when used too long in the engine.

While the committee stresses the importance of more frequent changes, "the industry needs", according to one oil company official, "an approach at selling crankcase drains at shorter intervals which cannot be construed as merely an attempt on the part of the oil industry to push the sales of oil."

No matter how much genuine interest the station attendant may have in safeguarding his customers' cars he is placed in the peculiar position of needing to prove that the oil needs draining and that he is not merely doing a routine job of trying to merchandise oil.

One of the best means for him to prove to his customers the need for more frequent changes, when the car is operated under anything but ideal driving conditions, can be found in the owners' manuals, which the average motorist probably has read only superficially, and then when the car was still regarded as a new toy.

The oil marketer can build an unanswerable sales talk for shorter drain periods around the recommendations made by the engineers who were responsible for the creation of the customers' automobiles, and who are interested only in the performance the car buyer receives. A sales story for stationmen which cites these recommendations can in no way reflect upon the motives behind the attempt to sell an oil change.

All manufacturers of popular makes of cars, except one, in effect, state that mileage alone is not a true gauge of motor oil life or performance, warning car owners to change oil when its condition warrants. These manuals add that winter driving, operating in dusty areas, and hard driving necessitate more frequent drains.

While Oldsmobile engineers have decreased their recommendation for the period between oil drains, they also emphasize that "it is necessary to change crankcase oil whenever it becomes contaminated with harmful materials." The manual adds; "Under dusty driving conditions or slow and mostly city traffic, where it is necessary to stop and start the car frequently, it may become necessary to drain the crankcase more frequently."

"Good lubrication is low-priced insurance against high maintenance costs for the automobile," say Packard engineers, who have reduced their mileage recommendation between oil drains for the third successive year.

In the 1940 Packard manual 1000 to 2000-mile changes are recommended as most closely approximating average conditions, but it adds that changes should be controlled by driving conditions. In 1939 Packard recommended changing oil every 2000 miles; while 2000 to 3000 miles was the recommendation for 1938 models.

"Low maintenance costs, long engine

Oil Drain Can Be Sales Lead For Change-Over Servicing

Freezing temperatures over much of the country since the first of November give the oil marketer and his service station men a good sales argument on motor oil, with which to drive for complete Winter Change-Over servicing.

Most automobile manufacturers, in their 1940 manuals, have based their recommendations for changing motor oil on standard driving temperatures, in place of recommending changes for "winter" and for "summer." In these ranges, when the temperature is below 32 Fahr., the change to winter grade of motor oil is recommended. When the motorist drives with summer grade of oil in his crankcase at much below the freezing point, he experiences hard starting and excessive wear on his engine during the warming up period.

Using the car makers own recommendations, which apply to older model cars as well as the 1940 models, the station salesman can urge that the car owner take warning from the recent cold weather, change to the proper grade of motor oil and at the same time have his car completely Winter Conditioned.

Using the car manufacturers recommendations for more frequent changes of crankcase oil in winter driving, the station salesmen can also watch the mileage of their customers' cars, even during the latter part of the Change-Over drive, and advise additional changes where severe driving conditions are encountered. The 1940 car manuals particularly advise changes of motor oil, at even 500-mile intervals, where a good deal of "start and stop" driving is done in the winter. Driving of physicians and salesmen and of a large portion of women drivers would come in this class.

life and best performance will be insured by changing the crankcase oil when it becomes contaminated," engineers of this company say in their manual.

"In winter, water accumulates in the crankcase from condensation of moisture produced by the burning of the fuel and may freeze and interfere with proper circulation. It also promotes rusting and causes clogging of oil screens and passages. While on long continuous drives this water may be removed by the crankcase ventilator, draining is a safer procedure," Packard engineers advise.

Packard owners are warned that "driving over dusty roads or through dust storms with dirt-clogged air cleaners introduces abrasive material in the crankcase. If this is not removed immediately by draining the crankcase, harmful engine wear may result, they are told.

"Hard driving in warm weather causes chemical changes in the oil. Accumulation of the products of these changes is undesirable and may prove harmful," the manual adds.

While other car manufacturers have not shortened their recommended drain periods, all except one attempt to impress upon the car owner in their manuals that the time between changes depends entirely upon conditions under which the car was operated. None, however, are suggesting longer periods between drains to purchasers of the 1940 models.

THE Chrysler Corporation recommends oil drain periods for Plymouth, Dodge, De Soto and Chrysler cars of 1500 to 2000 miles in winter and 2500 to 3000 miles in summer. However, many station operators, in trying to sell an oil change to customers driving one of these makes of cars, probably overlook the fact that Chrysler engineers add this:

"During winter, if the car is driven for short distances, moisture will condense in the crankcase and form a sludge which may freeze and clog the oil inlet screen. This is especially true if winter temperatures are extremely low for an extended period of time. Under conditions of this kind the engine does not become sufficiently warm to expel the water through the crankcase ventilation system, and the oil should, therefore, be changed about every 500 miles and under extreme conditions, less than 500 miles to eliminate sludge.

"Driving over dusty roads or through dust storms," Chrysler engineers point out to the car owner, "introduces abrasive material into the engine. Air cleaners which are kept in good condition decrease the amount of dust that may enter the crankcase. However, if the oil becomes contaminated with dust or dirt, it should be drained promptly

Endorses Winter Change-Over For New Car Owners Also

Owners of new automobiles should be included in the oil marketer's winter conditioning drive, says S. H. Trainor, head of the Marathon County Oil Co. of Wausau, Wis., president of the Wisconsin Petroleum Association, for it is a real service to assure them their recent investment is fully safeguarded against severe winter weather. Here is Mr. Trainor's message, through NATIONAL PETROLEUM NEWS, to marketers over the country.

S. H. TRAINOR

• By S. H. TRAINOR, President Wisconsin Petroleum Association

A short time ago a prominent cartoonist portrayed a woodpecker that had buried, in holes it had drilled in an oak tree, upward of 100 acorns for its winter's food supply. This bird might well be emulated by the motoring public in the way of preparing their cars for winter driving.

We find that best results in selling Winter Change-Over service are accomplished by personal solicitation on the drive by our service station attendant. His gasoline customer is his friend and the customer considers the man in the station his friend. In 90 per cent of the cases the car owner will accept the recommendation of his service man.

These service station men should be well schooled in the needs of their customers for safe winter driving, and recommend only such service as will protect the car against severe winter weather (such as we have in Wisconsin). This service should not end with the change to winter grease, winter oil, anti-freeze and battery attention, but your customer's car should be checked at regular intervals during the winter.

This applies to the owners of the new model automobiles, as well as customers still driving their old cars. The new car may just have come from the dealer but it is still a service for the marketer to check that car through the winter and assure the owner that it is functioning properly in the cold weather.

A satisfied customer is a big asset to the oil marketer because he tells his friends and in time you have new customers. This is a service that is most appreciated by the motoring public.

to prevent harmful engine wear. The frequency of draining depends upon the severity of the dust conditions and no definite draining periods can be recommended. It should be remembered that an oil change to eliminate abrasive dust may be considerably less expensive than to take a chance on worn engine parts."

If his customer is driving a Chevrolet or Pontiac, the station salesman can point out that, although engineers of these companies have recommended 2000 to 3000-mile oil changes, they state it may be necessary to drain more frequently under the following conditions:

"Short runs in cold weather, such as city driving, do not permit thorough warming up of engine and water may accumulate in the crankcase from condensation of moisture produced by burning of fuel. Water in crankcase may freeze and interfere with proper oil circulation. It also promotes rusting and may cause clogging of oil screens and passages. If water accumulates it should be removed by draining crankcase as frequently as may be required."

Buick engineers state that for best performance; "It is necessary to change engine oil whenever it becomes contaminated with harmful foreign materials." They also tell Buick owners that "your type of driving, local conditions and temperature must furnish the basis for deciding how frequently the oil should be changed."

The Buick, Cadillac and La Salle manuals state that, under adverse conditions, it may become necessary to drain engine oil more frequently than the 2000 to 3000 miles recommended for "normal" conditions. Some of the reasons these General Motors engineers give for more frequent changes are:

Short runs and frequent starts in cold weather increase "dilution" and water condensation in crankcase.

Dusty roads or dust storms cause contamination of engine oil even though air cleaners and oil filters are used.

Hard driving thickens oil, interfering with easy starting in cold weather.

The Nash owners' manual states that varying atmospheric and driving conditions enter into the matter as to when oil should be changed. Drains every 2000 miles are suggested, and every 1000 miles where "operated in low temperatures with frequent stops and starts". If driven through a dust storm an immediate change and flushing is recommended.

Hudson engineers state that oil should be changed at "intervals of 2000 miles or oftener if local conditions warrant." The recommendation for more frequent changes on account of dust or winter driving follows those of other automobile engineers as given above.

Studebaker engineers recognize that the frequency of oil changes depends "on the condition of the oil as affected by operating and atmospheric conditions." While under "average" conditions the state oil can be changed at 2500 to 3000-mile intervals, operation under severe dust conditions or short runs in cold weather will result in contamination and crankcase dilution and no definite mileage can be recommended, but "the oil should be changed more frequently under these conditions," their manual tells car owners.

Winter Driving

Considerable study of the effect of water contamination on the lubricating qualities of the oil in the crankcase, particularly during winter driving, and the effect on the oil of its dilution by unvaporized fuel, was made by the oil industry's Oil Change Committee, of which W. H. Correa of New York, of the lubrication department of the Socony-Vacuum Oil Co., is chairman. This is an independent committee of lubrication experts from many of the oil companies.

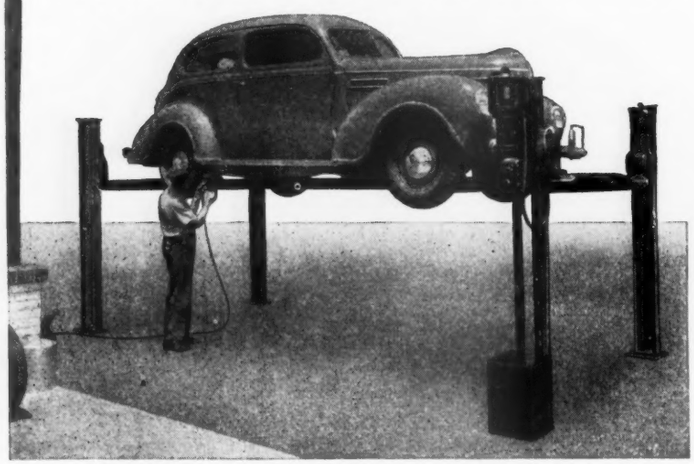
The report this committee issued contains the reasons that lubrication experts give for more frequent changes of crankcase oil in cold weather and provides effective sales material for the station men. The portion of the report on Water Contamination and Dilution reads as follows:

Water Contamination

"It is a fact, not commonly known, that over a gallon of water is produced in an engine by the burning of one gallon of gasoline. This water is ordinarily in the form of vapor or steam, but when the jacket water temperatures are low, some of this condenses and frequently gets into the crankcase.

"This condition is accentuated by low air temperatures and becomes rapid in

ATTRACT NEW CUSTOMERS with a CURTIS Four Post Lift



Curtis' Portable Electric Lift assures more business and greater profits

You can add strong sales appeal to your garage or service station with a modern Curtis Four Post Lift. Not only will you attract more lubrication jobs, but you will sell many more under-car repairs because of the unobstructed visibility when on the lift. And unusual accessibility makes it possible to do the work more quickly and easily—therefore at a greater profit!

It will pay you to buy the Curtis Lift—the only one which gives you *all* these features:

No Overhead Obstructions—Drive on either end—no interference with open car doors.

Safe—Each corner has safety dogs and safety switch. All four corners of platform stop should emergency occur at any corner.

No Excavation—No special foundation, no floor sockets.

Maximum Accessibility—Clear working space under car.

Easy to Install Anywhere—Move it when and where you like. Rigid. Self-supporting. No tie rods.

Exceptionally rugged construction—Extremely simple mechanism. Free-wheel and Roll-on types.

CURTIS ST. LOUIS • NEW YORK • CHICAGO • SAN FRANCISCO PORTLAND • LOS ANGELES

Send Coupon for Information and Prices

CURTIS PNEUMATIC MACHINERY CO., 1965 Kienlen Avenue, St. Louis, Missouri

Gentlemen: Please send me complete data including prices on the NEW CURTIS FOUR POST PORTABLE ELECTRIC LIFT.

Name_____

Firm_____ Street_____

City_____ State_____

sub-zero weather. It is particularly acute when short runs and frequent starts are necessary, as is the case with cars used by physicians, inspectors and salesmen. The same applies to motorists who use their cars only for short distances at a time.

"Under these conditions, while the jacket water temperature may reach a normal range, the crankcase remains cold and water in it is not driven off by evaporation.

"For Winter operation, this accumulation of water is the major factor in oil deterioration because, almost invariably, it mixes with the oil to form a thick, mayonnaise-like emulsion. Leakage of anti-freeze solution from the cooling system into the engine greatly accentuates the formation of emulsions. These often interfere with normal oil circulation and may, if neglected, lead to ruined bearings, pistons and cylinder walls.

"Serious damage may also occur from accumulations of condensed water vapor freezing in crankcases when cars are left standing exposed to low temperatures.

Dilution

"Winter operating conditions also tend to promote dilution of crankcase oil by unvaporized fuel. In intermittent service, automatic chokes may, with cold engines, remain in operation during the entire period of a short run so that rich mixtures are fed to the engine, thereby causing excessive dilution from the heavy ends of unburned fuel.

"The efficiency of the electrical system is always lower in cold weather. Battery output is much reduced, resulting in slower cranking. Ignition efficiency may be impaired by decreased battery voltage. Failure of the electrical system to function at high efficiency during extreme cold weather may result in unburned fuel working into the crankcase to cause excessive dilution of the lubricating oil. This condition may be aggravated if spark plugs have become fouled or are improperly adjusted."

Proper Lubrication

Another point which the station salesman can emphasize in selling oil changes, and which ties in with the recommendations of Packard, Chrysler and other automobile engineers, is the fact that it is cheaper for the motorist to change at frequent intervals, rather than pay repair costs caused by faulty lubrication.

On this subject, a report of the oil industry's Oil Change Committee effectively points out:

"The oil cost of frequent crankcase changes is extremely small compared with the cost of repairing damages resulting from faulty lubrication. For example, if a car with a five-quart crankcase capacity consumes one quart

K-24

24 KARAT OF PROFITS

Because it is

24 KARAT OF QUALITY

K-24 Motor Oil, refined from 100% Premium Bradford Crude, offers superb quality, great eye appeal, a wonderful name . . . and 100% protection in building a big-paying business. In 1 and 5 quart and 2 gallon black and gold lithographed cans — and in drums. *Send for samples and prices.*

Let Us Quote on

HIGH FLASH CYLINDER STOCKS

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SOLVENT DEWAXED NEUTRALS

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BLENDED MOTOR OILS

In Tank Cars, Drums and Cans

REFINERS OF

NO OIL — ALLPEN — LASTS LONGER

PERMIT NO. 10

Bradford

OIL REFINING COMPANY

PRODUCERS, REFINERS MARKETERS

100% PURE PENNSYLVANIA OIL

BRADFORD PENNSYLVANIA U. S. A.

for 1940 use

Battle Syndicated

•LUBRICATION RECOMMENDATION WALL CHARTS•

(MOTOR OILS & GEAR LUBRICANTS)

(Complete With Your Imprint in Top Space)

ORDER NOW: Immediate orders insure Early Shipment, Long Use, and Correct Servicing of the New 1940 Models.

Battle Syndicated Wall Charts Offer You 6 Advantages

(1) **Effective Advertising** : Battle Syndicated Wall Charts, Complete WITH YOUR IMPRINT in the Large Top Space KEEP YOUR COMPANY NAME AND BRANDS BEFORE YOUR CUSTOMERS.

(2) **Broad, Accurate Coverage:** All recommendations and data are based upon Factory supplied information.
Five Year's Model Coverage (1940, 1939, 1938, 1937, 1936).

Passenger Cars : All American Makes. Crankcase Refill (Quarts). Motor Oil Recommendations, All Temperatures. Transmission & Differential. Lubricant Capacities. Recommendations for Summer & Winter. Cooling System (Quarts). Fuel Tank (Gallons).

Trucks, Tractors: and Coaches Most generally used American Makes (Gasoline and Diesel). Motor Oil, Transmission & Differential Lubricant Recommendations, Summer & Winter.

(3) **Easy To Use:** All recommendations clearly given in S.A.E. Numbers.

(4) **Large Size** : 1940 BATTLE CHARTS measure 24 x 30½ inches.
Top IMPRINT SPACE measures 8 x 24 inches.

(5) **High Quality:** Printed in Two Colors, on Sturdy Index Card Stock.
Top Tinned with Hanger.

(6) **Low Cost** : Direct Sales enable LOW PRICES TO YOU for BATTLE SYNDICATED CHARTS *COMPLETE WITH YOUR IMPRINT.*

[*Write Today for Prices*
Please State Quantity and Imprint Colors]

J. R. BATTLE COMPANY, INC.

112 South Sixteenth Street, Philadelphia, Penna.

"Consulting Lubrication Engineers Since 1921"

The "OVERHEAD DOOR"
"Trade Mark"
THE DOOR WITH THE
MIRACLE WEDGE
wedges tightly—YET—opens easily

IMPORTANT:
The fast, smooth operation of this *weathertight* door will help solve your heating problems. Write for free descriptive literature *today*.

Backed by
A NATION-WIDE SALES INSTALLATION SERVICE
OVERHEAD DOOR CORPORATION, Hartford City, Indiana, U. S. A.

SERVICE
Without Frills

YOU can depend on Berry's service. Long years of experience have shown us what aids the private brand jobber needs and how to keep costs low so that you will have an adequate margin to build your own sales promotion and advertising plans.

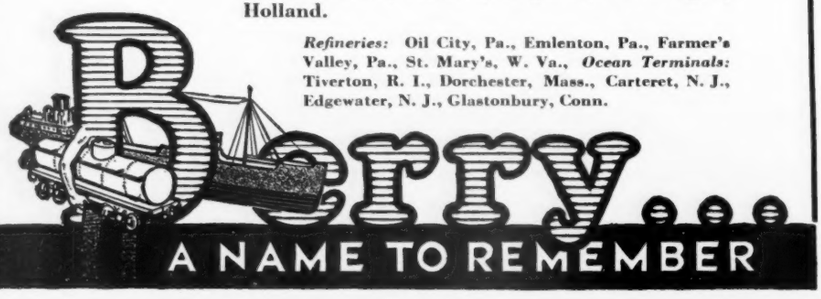
With convenient ocean terminals and four modern refineries Berry is prepared to ship promptly, to furnish you with highest quality products at buying prices so low that you cannot afford to spend time and money shopping around.

Make us prove this to your satisfaction. Ask us today.

JAMES B. BERRY SONS' CO., Inc.
GENERAL OFFICES—OIL CITY, PENNA.

Branch Offices: New York City, Chicago, Ill., Boston, Mass., London, England, The Hague, Holland.

Refineries: Oil City, Pa., Emlenton, Pa., Farmer's Valley, Pa., St. Mary's, W. Va., *Ocean Terminals:* Tiverton, R. I., Dorchester, Mass., Carteret, N. J., Edgewater, N. J., Glastonbury, Conn.



of oil every 500 miles, then in 7500 miles of operation (roughly the annual operation of the average passenger car) 43 quarts will be used if changed every 1000 miles, 35 quarts if changed every 1500 miles, and 31 quarts if changed every 2000 miles. Even if oil is changed only once a year, 19 quarts will be used.

"For the average motorist, the yearly cost resulting by decreasing the draining period from 1500 to 1000 miles is less than $2.50. Further extension of the draining period results in only a fraction of this amount as additional saving.

"On the other hand, even the simplest repair operation made necessary by faulty lubrication will wipe out any savings made by extending the draining period, and the extensive repairs made necessary by neglect to drain as recommended will cost many times any possible saving through extending the draining period."

Stations Can

How the service station operator can determine the condition of motor oil, of course, in a customer's car to determine the need for changing it, is another problem which enters into the sale of more frequent oil changes.

Stations, however, which make a record of car mileage of customers at oil changes are in a better position to sell additional oil changes with their sales talks predicated on local conditions, and this is especially timely for winter, when their sales talk might run somewhat along this pattern:

"Mr. Jones, I see where you have driven nearly 500 miles since the last drain. We have had low temperatures and you haven't used your car much, there is probably sludge in the crankcase due to condensation and dilution. The manufacturer of your car warns against faulty lubrication and advises frequent changes in weather like we've been having. Don't you think I ought to change the oil just to put you on the safe side?"

Methods used by stations to show condition of oil to the motorist range from the simple white napkin test to the "centrifuge test" recently developed by the Chicago Division of Socony-Vacuum Oil Co., which shows the percentage of solids to oil in the crankcase.

The napkin test is quite generally used. It is inexpensive and can be done speedily. With the proper sales talk, this simple test can be made a valuable aid in soliciting increased oil changes, especially if tied in with recommendations contained in the customer's car manual.

Some companies furnish or sell these napkins, many of which are imprinted with advertising messages aimed at selling oil. The station operator merely needs to check the oil level, withdraw the bayonet and wipe it on the napkin, showing the motorist the dirt in the

oil, which shows up on the white background of the napkin.

However, despite the fact that the industry has such simple sales helps as this napkin, a recent survey made by one large company at its dealer stations throughout the country shows that the main reason why oil changes are not sold is because while the station may check the oil level, they let slip by the opportunity to sell an oil drain at the same time.

This survey showed that, while dealers checked 80 per cent of the crankcases for the oil level, only one out of every seven were asked to have their oil changed.

Cities Service Oil Co. has developed a "plate test" as a guide to determine motor oil condition as indicated by its color, and to help sell oil changes.

This plate is of black porcelain, with the colors listed in one corner. A drop of oil from the measuring stick is placed on the plate. It is then compared with the color on the plate, the color of the oil indicating the following:

"Black: Indicates that the oil is broken down, thin and has lost most of its lubricating value.

"Gray: Indicates large traces of lead salts, ordinarily a sign that the oil should be changed and the crankcase flushed. However, if the crankcase has not been flushed in previous drain, this gray color may show up in a few hundred miles of operation. The customer is cautioned on this and advised on periodic checks and to have the crankcase flushed at the next change.

"Tan: Indicates the presence of water in the crankcase and that the oil should be changed. If the oil has turned this color after a few hundred miles of driving, the cooling system should be checked for leaks.

"Queer: This covers such colors as purple, orange, pink and unusual hues which indicate that the oil film contains chemical agents that react sharply in color due to acidity, decompositions, contamination with water or lead compounds. Continued use of oil in this condition is not safe and warrants careful periodic check or change."

The new "centrifuge test" of Socony-Vacuum Oil Co. enables the station attendant to take an oil sample from the crankcase of the car and give an analysis of the amount of dirt in the oil within three minutes.

The centrifuge is patterned after similar equipment already in use in the oil industry's laboratories. Engineers who have developed it as an aid to selling oil changes say it eliminates the guess work in determining condition of oil.

In making the analysis, the attendant draws a two-ounce sample of the oil through the bayonet opening of the crankcase with a special suction gun. The oil is then placed in a tube, mixed with an equal amount of precipitation naphtha and inserted into the centrifuge machine. Whirling the test tube at 3500 r.p.m. the machine draws the dirt from the oil by centrifugal force. Using a comparative chart worked out by company engineers, the attendant is then able to tell from the residue, the percentage of solids to oil in the crankcase.

Figures cited by W. J. Gerwe, manager of the automotive division of Chicago for Socony in presenting the centrifuge at a meeting of dealers recently, show that 100 average customers bought 20 barrels of motor oil in 1933, returning $550 in gross profit per year to the station, while in 1938 the same 100 average customers bought 11.8 barrels of oil providing a gross profit of $325.40, a decline of motor oil profit of $225 per year, and a loss of 41 per cent in oil volume since 1933. He added that the average mileage between drains in 1933 was 1000 miles, against 1772 miles in 1938.

Marketing companies whose stations and attendants are guided in making recommendations to motorists by wall charts hung in the lubrication rooms, should bear in mind that some of these carry only the manufacturer's general rules regarding mileage between oil changes. They do not carry each exception where the automobile manufacturer recommends more frequent changes. Probably a substantial increase in oil drains can be accomplished if marketers bring this fact to the attention of greasing and oil attendants in the stations.

"STALLING ALL CARS! DON'T USE ANTI-FREEZE TILL YOU CLEAN OUT WITH SANI-FLUSH!"

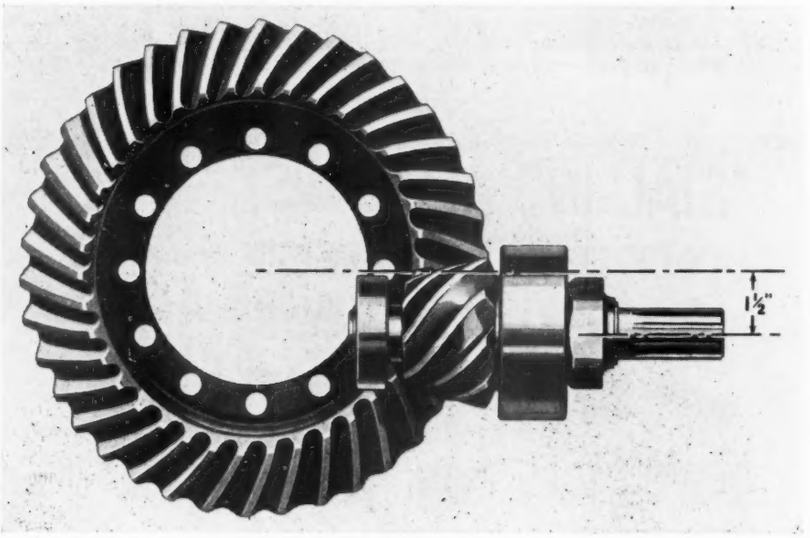
The same compound you use to keep toilets sparkling-clean

Old Man Winter has two strikes on you if you put anti-freeze in a dirty radiator. Rust and scale choke the cooling system. The motor overheats. The customer wastes anti-freeze. He may freeze up, and blame you.

Stay on the safe side! Use Sani-Flush—the same preparation you use to keep comfort station toilets gleaming white. Your customers know Sani-Flush; it is advertised for automobile radiators in almost 12 million magazines every month. It is the only product being advertised consistently for cleaning out rust, sludge, sediment and scale from the cooling system. Sani-Flush costs 10c to clean a car radiator (25c for the largest truck or tractor). This is a small part of the price you can charge for the work.

Buy Sani-Flush in grocery and hardware stores. 10c and 25c sizes. Also economical 25-lb. pails. Write for information. . . . The Hygienic Products Company, Canton, Ohio.

Hypoid Gears in Trucks Raise Lubrication Problem



Hypoid gears designed for low speed, high torque truck operation and raising a new lubrication problem were first used on trucks in 1939. This is the hypoid gear introduced by Chevrolet on truck rear axles in 1940

WHAT does "Truck-Duty Hypoid Lubricant" and "Passenger-Car-Duty Hypoid Lubricant" mean to the oil marketer in his servicing of automotive equipment at service stations?

Following the announcement by some automotive companies that these terms had been adopted to differentiate between the lubrication requirements of hypoid rear axles used in passenger cars—where speed is high and torque low—and those used in some truck models today—where speed is comparatively low and torque is high—some confusion has arisen as to conformance of the various hypoid lubricants to these brackets.

Even though some passenger car chassis equipped with hypoid gears had been used in light truck duty earlier, the problem did not become acute until heavier trucks were equipped with hypoid rear axles in 1939.

A study of the situation showed three essential classifications of hypoid lubricants:

1—**Those satisfactory** for use in passenger car, but not truck duty.
2—**Those satisfactory** for truck, but not passenger car duty.
3—**Those satisfactory** for use in both passenger car and truck duty.

In general, it holds that the particularly active or powerful type of hypoid lubricant comes under the designation of a "Passenger-Car-Duty hypoid lubricant", whereas the so-called mild type conforms to the designation of a "Truck-Duty" hypoid lubricant. The dual-purpose lubricants, meeting both passenger car and truck "Duty" requirements are of the mild type.

However for his own protection, as well as for customer satisfaction, the oil marketer should determine from his supplier whether separate products are required for vehicles operating in passenger car duty and in truck duty, or whether one hypoid lubricant of his supplier will serve both purposes.

With the introduction of hypoid-geared trucks by Dodge Motor Co., division of Chrysler Corp., in 1939, and of the 1940 model, 1½-ton truck by the Chevrolet Division of General Motors Corp., some complications have arisen regarding the proper types of lubricants for servicing these units. The makers of these two truck models are unanimous in their decision that the older type, lead-soap, active-sulfur type of hypoid lubricant is unsuitable for these trucks, and that the "mild-type" lubricant must be used in their gear cases exclusively.

The lead-soap, active-sulfur lubricant was the first product developed for lubricating hypoid gears some years ago when Packard first introduced these gears in passenger cars. This product has been more widely used for this purpose than any other single type, the development of the mild hypoid lubricant having come in the last few years. Lead-sulfur lubricants have given a good account of themselves and are still rated satisfactory for passenger car service by practically all automotive manufacturers. However during recent years a number of mild-type products have shown good satisfaction and have been widely accepted for the same services—passenger car hypoid lubrication. It is claimed that they show less wear on gears, and have other advantages over the older type of hypoids.

The difference in the requirements for truck hypoids arises, engineers say, from the different operating conditions found in the two types of vehicles. The passenger car meets its most severe operating conditions at high speeds and relatively low torque, that is, relatively low unit pressures on gear teeth. Under these conditions the lead-sulfur product gives satisfaction, as does a considerable number of the mild type products now widely distributed.

THE hypoid-geared truck finds its most severe operating conditions at low road speeds and relatively very high torque, that is, high tooth-loads.

Under these conditions the older type of hypoid lubricant is said to be too severe in its action on the gear assembly. Corrosion and wear take place. Use of the older lead-sulfur type is therefore not recommended in these units.

Because of this situation, and the strong possibility of confusion among oil company stations and service organizations with resultant use of the wrong product in the wrong vehicle, representatives of several automotive companies met several weeks ago and agreed to divide hypoid lubricants into two classifications, Passenger-Car-Duty Hypoid Lubricants, and Truck-Duty Hypoid Lubricants.

Exhaustive testing by the two companies making hypoid-geared trucks has shown that several mild-type lubricants are satisfactory for this purpose. These therefore are accepted for this service, the acceptance in each case

being the result of testing each individual type of lubricant to determine its suitability for truck service.

Several of these products suitable and accepted for truck service have also proved satisfactory for use in passenger cars. For example, General Motors recently adopted four sets of specifications covering hypoid lubricants suitable for that company's passenger cars.

The Chevrolet Division of that company has found that products meeting the first specification, Nos. G. M. 4654-M and 4655-M, covering lead-sulfur hypoid lubricants, cannot be used in the Chevrolet 1½-ton truck just introduced this fall.

Mild-type products meeting the other three specifications, Nos. 4661-M, 4662-M, 4663-M, 4664-M, and 4734-M, 4735-M, already accredited as satisfactory for passenger cars, are found satisfactory for Chevrolet truck service, and are so accepted.

A similar situation exists in the Chrysler organization, which has not issued formal standard specifications so far.

This situation does not mean, necessarily, that any lubricant which has been used in passenger car hypoid gears is either satisfactory or unsatisfactory for truck hypoids. Suitability of any given hypoid lubricant for this "dual-purpose" role is determined by test by the car manufacturers.

The safe procedure for the marketer of hypoid lubricants before he offers one product for this "dual-purpose" service is to find out from his supplier if this product is satisfactory for both services.

For a marketer to handle products suitable for only one of these services means that two different hypoid lubricants must be carried in stock and furnished to the trade, if both hypoid-geared trucks and passenger cars are to be serviced. If a mild-type product which has proved satisfactory for both uses is supplied, the marketing of a second hypoid lubricant is unnecessary.

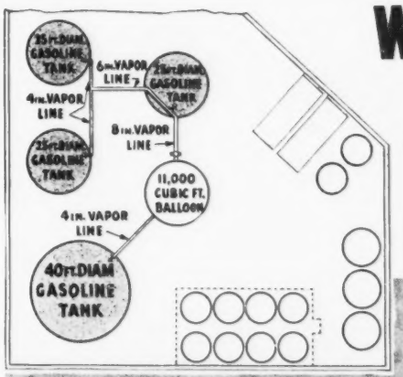
Compression Ratio Trend Upward

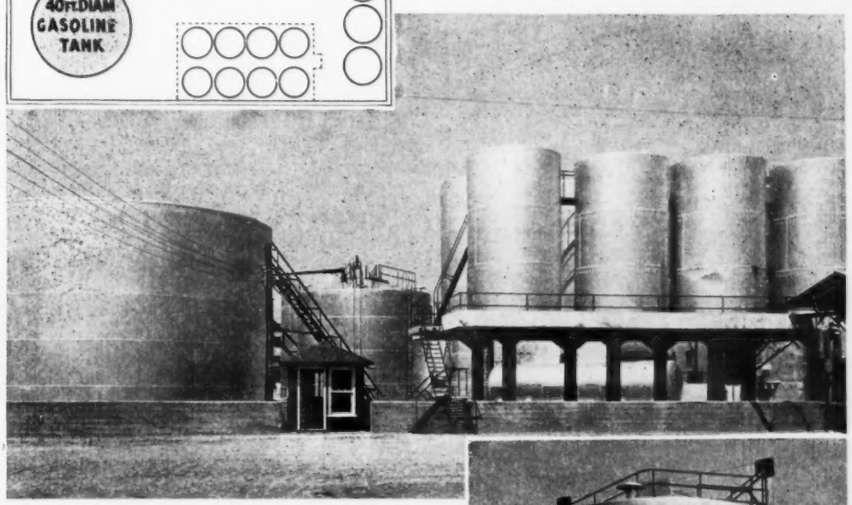
(*Continued from page* 59)

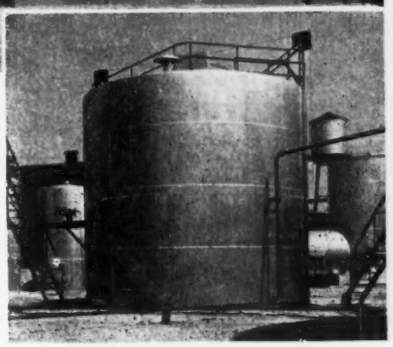
shaft. LaSalle, Pontiac, and Hudson have improved carburetion — Pontiac also changed the combustion-chamber design on the 6-cylinder engine, and has adopted dual carburetors on the new Torpedo 8 to obtain 103-h.p. from the 100-h.p. engine used on the Deluxe 8. Willys has adopted an aluminum head to achieve its 7.0 to 1 compression ratio and a 61-h.p. rating.

For the super critical it should be pointed out that average figures on the accompaning table are affected by reason of the fact that some cars in production in 1939 have been discontinued or replaced in 1940 with other models.

WIGGINS BALLOON
Prevents Vapor Losses from FOUR TANKS


25 FT. DIAM. GASOLINE TANK
6 IN. VAPOR LINE
25 FT. DIAM. GASOLINE TANK
4 IN. VAPOR LINE
8 IN. VAPOR LINE
25 FT. DIAM. GASOLINE TANK
11,000 CUBIC FT. BALLOON
4 IN. VAPOR LINE
40 FT. DIAM GASOLINE TANK





The diagram at the top shows the layout of the Wiggins vapor saving system at the Imperial Oil Limited bulk plant. The large illustration is a general view of the terminal. Directly above is a close-up of the piston balloon at Winnipeg.

at Winnipeg, Canada

TO provide more efficient service to its many customers, the Imperial Oil Limited bulk oil plant at Winnipeg has been completely modernized. The terminal consists of three 25 ft. diam. and one 40 ft. diam. tanks and fifteen smaller cylindrical tanks. Three grades of gasoline are handled here, as well as kerosene and fuel oil. Shipments are received by tank car from a marine terminal, or direct from the company's refinery.

The four larger gasoline storage tanks are connected into a Wiggins piston type Balloon, forming an efficient vapor saving system. When increasing temperature causes the vapor in these tanks to expand, the excess flows through vapor lines to the balloon, which has a capacity of 11,000-cu. ft. Vapor is then held until the temperature drops, causing it to flow back into the tanks.

This installation offers another striking example of the way in which Wiggins Balloons are being used to reduce waste and increase profits at bulk marketing stations. Please address our nearest office for information.

Chicago Bridge & Iron Company

Cleveland	2206 Rockefeller Bldg.	Dallas	1439 Liberty Bank Bldg.
Chicago	2125 Old Colony Bldg.	Birmingham	1534 N. Fiftieth Street
New York	3345—165 Broadway Bldg.	Houston	2919 Main Street
Philadelphia	1614—1700 Walnut Street Bldg.	Tulsa	1607 Hunt Bldg
Boston	1516 Consolidated Gas Bldg.	San Francisco	1060 Rialto Bldg.
Detroit	1513 Lafayette Bldg.	Los Angeles	1422 Wm. Fox Bldg.

FABRICATING PLANTS in Birmingham, Chicago and Greenville, Pa.

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POWER and LIGHT
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Station operators everywhere are cutting their electric costs amazingly with WITTE Dieselectric Plants—outstanding pioneers in the small Diesel field. Operate on cheap, non-explosive fuel. Compact, sturdy—give years of efficient service.

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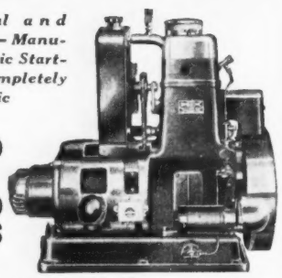

1500
TO
8000
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Makers of Reliable Products Since 1870
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SOUTHWEST FOR Good GREASE

NEW
ALL PURPOSE EXTRA DUTY GEAR LUBRICANT
Meets industry's demand for ONE lubricant for ALL gears — Heavy Duty Hypoid, Hypoid, Extreme Pressure, Conventional. Two weights, S.A.E. 90, S.A.E. 140.

NEW GUN-FIL
A container for filling Grease Guns fast and clean. No mess. No waste. Gun-Fil sells grease.

NEW — SEND FOR ILLUSTRATED FOLDER & PRICES covering our complete line of laboratory controlled greases and useful containers.

SOUTHWEST GREASE & OIL CO.
OFFICE & FACTORY: 225 W. WATERMAN
WICHITA, KANSAS

Today's Motor Oils Improved In "Varnish" Resistance

CONTINUAL improvement in the manufacture of automotive lubricants is being made by the oil companies, to meet the increasingly severe operating conditions in automobile engines.

Unlike the car manufacturers with their annual models, the oil companies do not formally announce changes in the characteristics of their motor oils, or heavier automotive lubricants, except at infrequent intervals. Such changes are being continually made, however, as the need for them arises and as the research of the oil company develops the suitable lubricants to meet new conditions. Thus the oils keep pace with the stricter demands of the automobile engines.

Changes in the requirements of motor oils to meet the needs of the 1940 automobiles are mainly in the improvement of the oxidation stability of the oil, to meet high engine temperatures and decreased clearances between pistons and cylinder walls, the lubricant refiners tell NATIONAL PETROLEUM NEWS. Oxidation stability is the ability of the oil to resist the chemical combination of some of its constituents with oxygen in the air, either when the oil is in service in an automobile engine or when it is in storage.

Lubricating oils show wide variations in their physical and chemical properties when subjected to oxidizing conditions, the causes of these variations being not yet thoroughly understood, which has added to the problems of the refiners in producing motor oils which would resist the tendency to oxidize. Oxidation, as it may occur in an oil in an automobile engine, is detrimental to the lubricating qualities of the oil because of the formation of sludge and possibly "varnish", increase of viscosity of the oil and sometimes corrosive action of the oil, particularly at high temperatures.

"Varnish" is a resinous substance produced by chemical reactions taking place in the oil in the crankcase—perhaps through oxidation of the oil, because of the high operating temperatures in the engine, because of the presence of dirt or moisture in the crankcase, or possibly due to the type of alloy bearings used in the engine, or perhaps other causes. This "varnish" adheres tightly to smooth metal surfaces and is said to be responsible for sticking of valves and piston rings, with loss of power resulting and high oil consumption.

The following factors and possibly others are said by the lubricant refiners to be involved in the oxidation of an oil: chemical composition of the oil, its volatility, viscosity, the procedure under which it is refined, temperature it meets in service, oxygen contact, removal of oxidation products, catalytic action of metals and the presence of inhibitors, or additives.

The first four characteristics named, and the last, are within the control of the refiner. Chemical composition of an oil is a comprehensive factor which depends upon the characteristics of the crude oil first and then upon the refining procedures. Oxidation stability can be improved, therefore, by improving refining methods.

Refiners who have turned to solvent refining are convinced that solvent treatment is particularly desirable from the standpoint of improvement of oxidation stability. The growing number of refiners who employ any of the several solvent extraction methods is evidence of advantages in these methods. By a solvent refined oil is meant one produced by a process in which some agent is added to the oil stock during manufacture to dissolve out, or select, certain portions, thus separating the portions of the stock desired for their lubricating qualities from the rest.

Improvements in clay treating have been made and put to use. Although employed chiefly to improve color, clay treating does help in the removal of resinous and asphaltic substances which increase the tendency of the oil to oxidize. Sulfuric acid treatment is also an improver of oxidation stability. A number of refiners find that improvements in the various refining processes are all that is required to produce a motor oil which will meet all requirements of the new automobile engines.

On the other hand, there are refiners who "find no evidence that requirements of the modern automobile engine can be met unless full advantage is taken of modern petroleum refining processes and also additives," to quote one of them.

Additives are chemical compounds, either of petroleum origin or other source, which are added in small proportions to lubricating oils to improve any of several properties of the oil.

Some additives act to inhibit or prevent the chemical reaction of oxygen with the oil. Advantages are found by some refiners in this "assembly method of producing motor oils", in the readiness with which the components of

the oil may be adjusted to meet new requirements as they arise. Numerous chemical compounds have been developed in research laboratories which may be used as additives in lubricating oils in very small percentages to improve oxidation stability, as well as a number of other qualities of motor oil. One refiner states:

"We have been and are now adding to these oils multi-functional addition agents to improve the quality and range of usefulness of the oil simultaneously in several different respects. We believe that the increasing severity of the requirements of modern automotive engines has brought and will continue to bring problems which are beyond the range of straight petroleum oils regardless of source or refining method and that the greatest improvement in coping with the increasingly severe requirements will be through the use of addition agents."

By both methods of manufacture described above, refiners today produce motor oils that satisfactorily meet the exacting demands of the 1940 cars, as well as those of preceding years.

NEW EQUIPMENT

And the Manufacturers

DEGREE DAY CALENDAR—A degree day calendar is offered by the New York office of the Ralph N. Brodie Co., Inc., manufacturers of Brodie meters, which gives the degree day for New York city through the 1937-38 and 1938-39 heating seasons, as compiled from the reports of the U. S. Weather Bureau. In addition, it incorporates a calendar for the 1939-40 season, with space under each date for recording the degree days for the current 24-hour period. Degree days, as used by the oil heating trade, register cumulatively for the month the extent to which the temperature was below a "base" temperature of 65 Fahr.

The New York office of the Brodie company, 425 Chrysler Bldg., offers also for the New York city area a monthly report for the current season giving the degree days for the preceding month.

* * *

ERECTS NEW BUILDING—Ground has been broken for a new engineering building for Walter Kidde & Co. of New York, makers of carbon dioxide fire extinguishing equipment, to be located on the company's manufacturing site in Bloomfield, N. J. It will add 20,000 square feet to the company's working space and house 110 engineers.

NEW ORLEANS—Houston W. Martin, sales engineer for the Ralph N. Brodie Co., here has been critically ill but is now recuperating at home and is expected to be out in a few weeks.

DAN, THE RUBBER MAN, SAYS:
STOP!
SQUEAK
SQUEAK
8-oz. dispenser size (shown at right), Dealer's Price 30c
● Stop rubber squeaks with RUGLYDE, the 100% safe lubricant for rubber shackles, bushings, and fittings. It penetrates quickly—lasts as long as the lube job—will not come out in the wash. RUGLYDE will not injure rubber, metal, or car finishes. It is non-flammable . . . non-poisonous. Furnished in refillable 8-oz. dispensers and one-gallon refills.
AMERICAN GREASE STICK CO., MUSKEGON, MICH.
Mfrs. of DOOR-EASE Stainless Stick Lubricant and DOOR-EASE Dripless Oil
Contains dag Colloidal Graphite
RUGLYDE
FOR Rubber SHACKLES AND FITTINGS
PENETRATING RUBBER LUBRICANT

HOP TO IT!
By leaps and bounds, requirements for Mild E. P. Lubricants are growing . . . cash in now with Penola Mild E. P. Base
Today's successful compounders blend Penola Mild E.P. Base with their mineral oil stocks. For this base blends easily, yet never separates out in storage. It's sediment-free and doesn't precipitate. Only active chemical present is non-corrosive sulphur. A permanently extreme pressure base, Penola Mild Expee is suitable for all but severe hypoid uses. Here's your chance to build bigger business and greater profits... jump at it NOW!
PENOLA MILD E.P. BASE
Penola Inc., 30 Rockefeller Plaza, New York City · Formerly Pennsylvania Lubricating Co.
WORLD'S LEADERS IN SPECIALIZED LUBRICANTS

Beats Auto Dealers To Their New Car Buyers

Raymond A. Magee, manager of the Magee Oil Co., independent marketer with headquarters in Berlin, Md., beside one of the 1700-gallon trucks in which his company hauls gasoline to 14 company-owned stations and 30 retail dealers

THE MAGEE OIL CO., independent marketer of Maryland, gets right after all new car owners for their motor oil and lubrication business, as well as their gasoline trade.

The oil company proceeds on the assumption the car dealer did not sign the new car buyer up on a lubrication contract and sets out to sell its own products and services.

Within two or three days after he drives one of the new models from a dealer's sales rooms, the new car owner along the "Eastern Shore" counties of Worcester, in Maryland, and Sussex, in Delaware, receives the first of a series of four personal letters from the Magee company. The letters are signed by Raymond A. Magee, as manager of the Cross Roads Auto Serevice, the one station the Magee Oil Co. itself operates. Mr. Magee is also manager of the oil company.

The names of new car purchasers in its territory are obtained from an agency in Baltimore and immediately placed on file cards. The cards carry in addition to the name of the purchaser, the make and model of the car, the dealer from whom it was purchased, the company through which it was financed and the date of the purchase. The names of the dealer and the finance company are included so that, should that new car owner come into a Magee station to make a credit purchase, it can be quickly checked as to how he is keeping up payments on his car.

If the new car is a General Motors, for example, the first letter to its owner gives the name of the car and states it is equipped with a Delco battery, for which the oil company is an authorized dealer. It asks the owner to bring his car in and have the battery registered so that he is assured of the guarantee it carries against defects. The letter offers free testing and filling service on the battery and suggests the car owner stop in every two weeks for this.

The second letter is what Mr. Magee calls a "get acquainted" letter to the new car owner, introducing the oil company's products.

"I see you have a new ———. I have a suggestion that will save you money," it begins. It goes on to state Mr. Magee's belief that, if the owner will use his oil company's gasoline and motor oil exclusively in his new car, it will operate more economically and last longer than on any other products.

"I hope you will always bear this in mind when you need gasoline and oil," the letter concludes.

The third letter to the new car owner extends the privilege of a credit card of the Magee Oil Co.'s supplier and encloses a credit card application.

The fourth letter explains the safety features of the line of tubes the Magee Oil Co. handles and suggests that the new car owner come in to the oil company's station to see about a deal by which he would exchange the plain tubes in the tires on his new car for the specials the oil company sells. He is told a liberal allowance can be made for his present tubes while the car is new and that he can have terms if he wants them. "Let us explain our changeover plan," the letter concludes.

If these four letters do not pull the new car buyer into the station, so that a "personal" contact may be made, Raymond Magee sends him a personal card, saying he'd like to see him at his convenience, to explain his company's products and services.

Also, the company has one outside salesman who calls on the trade four days of the week, and is available the other two days for various other jobs —among them making personal calls on new car buyers who haven't heeded the sales letters.

The set up of the Magee company should be explained before the rest of its story is told. It has but one company-operated station, which it calls the "Cross Roads Auto Service," located on a busy highway crossing just at the edge of Berlin, a town of about 1500.

At this station-garage is maintained

The Cross Roads Auto Service station of Magee Oil Co. in Berlin, Md., the only one of 14 company-owned stations the company itself operates. Its sales letters to new car owners are designed to pull their business into this station but they receive the same services at its other outlets

a large inventory of auto parts and accessories, as well as seven gasoline pumps, grease racks, lifts, wash racks, and a workroom for three mechanics.

Its retail outlets are 13 company owned stations which are leased to operators, about 30 other dealers, most of them one-pump outlets at country stores, and it also has numerous farm accounts.

While the invitations to new car owners from Mr. Magee are on the letter heads of the company-operated Cross Roads Auto Service, motorists are offered the same services at the leased and dealer outlets. The company explained the real purpose of the letters is to get this class of customers into the service stations, for grease jobs and gasoline and oil and other services and products sold there. Mr. Magee believes the new car owner is "more religious" about taking care of his new investment, through having it lubricated and washed, adjustments made for minor troubles, and in other matters, so that he is a more frequent patron of the service station than owners of old cars, if his regular trade can be secured.

Most automobile dealers on the "Eastern Shore," Mr. Magee says, have dropped the practice of giving free lubrication for several months to purchasers of new cars. Not many car buyers took advantage of this offer, he said, preferring to get their grease jobs where they bought their other automotive supplies.

When a new car makes its first visit to the Cross Roads Station in response to the sales letters, the call is noted on another card, listing the mileage, what its owner had done on this first visit to the station, and when various services will be necesasry again. Then follow up cards, or "reminders" go to its owner when the Cross Roads station estimates it is time for a repeat on the grease job, battery check, shock absorber checkup, or whatever service it may be.

Another "follow up" check is kept on tires and this explains why the date of purchase is put on the first card made out for new automobiles purchased in the Magee territory. When it's about time for the car to have new tires a letter suggesting new tires is sent.

These card files are only kept for the Cross Roads Station, as the leased stations are run independently by their lessees. However, frequent calls by Magee's salesman keep the company informed as to the effect of its advertising and sales efforts on their dealers' business also.

Mr. Magee said the new car owner sales program has been under way only since about March or April of this year, and that he can't tell as yet just exactly how it's working out—but that it's building up business both for Cross Roads and for the Magee company's retail outlets. Some changes may have to be made in the letters, some more added on lubrication or some other product or service the com-

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NO INCREASE IN PRICE!

	Each		Each
1 to 9	40c	500 to 999	17c
10 to 24	36c	1000 to 2499	15c
25 to 49	32c	2500 to 3999	14c
50 to 99	28c	4000 to 5999	13c
100 to 249	24c	6000 to 7499	11½c
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Price includes packing, ready for mailing in individual mailing tubes . . . Special imprinting on quantities over 1000. For price on smaller quantities send sketch showing design.

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THE NEW LUBRICHART WALL CHARTS PROVIDE YOU WITH ACCURATE SERVICE DATA AT A LOW COST.

The Lubrichart Wall Chart provides you with five years coverage of Passenger cars and Trucks . . . Capacities of crankcase, transmission, differential and radiator. Contains two full pages of car, truck and tractor manufacturers' lubrication recommendations. Accurate in every detail. Neat and attractive. Printed in two colors on strong wear-resisting paper. Tinned reinforcement on top with convenient hanger. Size of chart 16½ x 24. Imprint space on top 16½ x 4½. 8 years experience compiling accurate lubrication charts. Used by leading marketers.

Be prepared to service the new 1940 cars... Place your order now for prompt delivery.

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Since 1919

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QUAKER CITY 100% Penna. oil sales increased 300 per cent in 1938 (there's a reason). The popularity of this brand is growing by leaps and bounds. Prices are low . . . quality is high. Exclusive territory available. Shipped in one and five quart cans, and drums.

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Now is the time to order

1940 Chek-Chart Wall Charts . . .

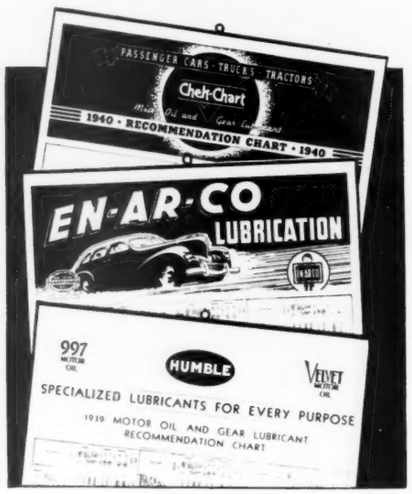
IMMEDIATE ORDERS

ASSURE PROMPT DELIVERY . . .
EARLY DISTRIBUTION . . . . .
GREATER RETURN ON YOUR INVESTMENT . . . . . .

● There is every reason to order your 1940 Wall Charts *now*—and no good reason for delay . . . because

1. Early distribution enables your dealers to service the *first* of the 1940 cars.
2. Imprinted with your own company heading, Wall Charts are a powerful point-of-sale advertising medium—one which is constantly seen by your dealers and their customers. The earlier your 1940 charts are up, the sooner do you get the benefit of their advertising value.
3. The net result is longer life for your charts—greater return on your investment.

1940 CHEK-CHART Wall Charts will be ready this year as early as November. The same factory-verified accuracy and convenient arrangement as previous edition. The same complete coverage (ALL passenger car models and all generally used trucks and tractors of the past 5 years). The same generous imprint space. *More CHEK-CHART Wall Charts are used each year than all other types combined.* Order your supply NOW.



PRICES

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Quantity	Price	Quantity	Price
1— 9	$0.50 each	500— 999	$0.21 each
10— 24	.45 each	1000—2499	.19 each
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50— 99	.35 each	4000—5999	.16 each
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250—499	.25 each		

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THE CHEK-CHART CORPORATION

Detroit Editorial Office: General Motors Building

624 South Michigan Avenue Chicago, Illinois

In Canada Chek-Chart Corporation Limited 283 King Street East Toronto 2, Ontario

HEADQUARTERS FOR AUTOMOTIVE INFORMATION

pany and its stations offer, or some dropped, Mr. Mage says.

But, he states, the Magee Oil Co.'s business so far in 1939 is running 10 per cent ahead of 1938, including the three months before the new car plan was under way. For one month since the plan was inaugurated, business was 18 per cent ahead of the corersponding month last year.

Ever since the company was started by his father, Frank Magee, in 1924, it has never had a year in which business was not better than the preceding year.

Largely responsible for this, Raymond Magee points out, is the fact that the "Eastern Shore"—that narrow peninsula which divides Chesapeake Bay from the Atlantic—is not like industrial areas where economic ups and downs are sharply, and immediately, felt in oil companies' business. On the shore, particularly in the Berlin neighborhod, the chief industries are fishing and oystering, agriculture, and taking care of summer resort guests—Berlin is only about 8 miles from Ocean City.

Another contributing factor to its increased business, he says, is that the company has been building up its parts, accessories and tire business for the past four or five years—at the suggestion of Magee the elder—who foresaw narrowing margins on petroleum products and decided that it would be best to get a few eggs into another basket. In addition to automotive parts and accessories, a nice business in radios and refrigerators is being built up, also.

As a result, 1938 gross sales were $350,000, divided into: petroleum products, $200,000; tires $40,000 and parts and accessories (exclusive of tires) $100,000. This includes the wholesale business of Magee Oil Co., as well as the retail business of the Cross Roads station.

Magee Oil Co., sold about 1,200,000 gallons of gasoline in 1938 and about 700,000 gallons of other products, Mr. Magee estimates.

Most of the retail accounts, both lessee and dealer, sell some of the parts, accessories, tires, and other merchandise, which Magee wholesales, but there is no compulsion about it. "The salesman calls on them just like he does on anybody else," Mr. Magee explains, but he says "it's to their advantage to have the products we advertise as available at our own stations."

The Magee company advertises in the three weekly papers in its territory, runs "trailers" in the local motion picture houses, maintains a score of large billboards advertising its stations and otherwise publicizes its products and outlets. It has been a jobber of one oil supplier since starting in business in 1924, and has never operated any retail outlets except the Cross Roads station.

Frank Magee, founder of the company still is listed as "proprietor" on the company's letterheads, but active management is in the hands of his son Raymond, and other son, Paul F. Magee, is secretary-treasurer of the company.

1940 NEW CARS

Offer New Opportunities

(*Continued from page* 35)

ment in simplifying lubrication procedure.

An example of this is the adoption by Chrysler of transmissions on its entire line, including De Soto, Dodge and Plymouth, which have been redesigned so that they are practically identical on all models. To the service man this means that conventional transmissions on all these cars now have a uniform capacity of 2¾ pts., and, on models offering overdrive are uniform at 4 pts.

Adoption of uniform independent front wheel suspension units on two La Salle and three Cadillac models, has permitted standardization of lubrication points and greatly simplified servicing procedure.

Other evidence of a desire on the part of automotive manufacturers to take advantage of economies offered by greater uniformity in production, is the trend toward adoption, as standard rather than optional equipment, of such accessory items as steering column gearshifts, oil filters, shock absorbers, turn indicating signal lights, and similar items.

In 1940 standard gearshift location is on the steering column for all cars, except Willys Speedway, Bantam and Crosley. Direction signals are standard on Buick, Cadillac, La Salle and Hudson Country Club models, and optional on Chevrolet, Oldsmobile, Pontiac, Hudson—except Country Club—and Packard.

Plymouth has put an oil filter on Roadking models as standard equipment, and all 1940 Buicks come equipped with this feature. For the first time Hudson is offering an oil filter—low pressure type—as available equipment.

Indications are that service station salesmen of the future will have to adopt a new technique in the inspection of crankcase motor oil level. Introduction by Hudson in 1939 of a device for locking the alligator-type hood —against theft of under-the-hood equipment—found three new converts in 1940 — Chevrolet, Oldsmobile and Studebaker—and it will no longer be possible for the station salesman to make routine inspection of either oil or water on these models.

Operated from the driver's compartment by a knob on the dash, these locks generally have a secondary catch —to prevent the hood blowing open accidentally in case it is accidentally unlocked. This must be released from outside the car before the hood can be opened. Details of how these releases work are outlined for the individual cars on following pages.

Among other new features on 1940 cars is the use of curved plate glass, which has been confined to rear windows. It follows body contours, permits elimination of rear window division, and gives about 15 per cent greater window area. Hudson and Chrysler have adopted this glass, which is not laminated, but is formed by heating and then quenching in an air blast.

Running boards are absent in 1940 on the Buick series "50" and "70"—new additions to the line this year—Lincoln-Zephyr, Cadillac 60S, Pontiac 29 Standard, Oldsmobile "90", Studebaker Champion, Bantam, Crosley and Willys. The following cars can be purchased without running boards if desired: Chrysler-made cars, Buick "40" and "60" Convertibles, Cadillac 62, La Salle, Hudson, and Pontiac "26" and "29" series. Other cars have conventional running boards.

Hailed by many as Number One safety development of 1940 and certainly heading the list of improvements common to the greatest number of cars, is the sealed beam headlight system, which is used on every car now in production with the exception of Willys, Bantam and Crosley.

Developed after three years of research by the automotive industry in co-operation with safety organizations and others working in the interest of increased highway safety, the new lamp comprises a light source—filament or bulb—reflector and lens in a single sealed unit.

This unit cannot be opened and when defective must be replaced in its entirety at a cost to the car owner of $1.35. Advantages to the driver include: more light, efficiently directed to the road surface; estimated 100 per cent longer life; practically no decrease in efficiency throughout life; ease of adjustment and replacement; and interchangeability on all makes of cars.

Features of the new headlights include two beams, one for town driving and one for country driving. Selection of the beam is controlled by the driver from a push switch on the floor.

Two types of sealed-beam units are available, one built entirely of hard glass, the other featuring a metal reflector sealed to a glass lens. Both are completely interchangeable. Replacement is accomplished by loosening three screws—after the rim is off—removing the defective lamp unit by detaching a retaining ring, and installing the new unit. Vertical and lateral regulation of the light beam is controlled by two adjusting screws. The sealed beam headlights, while they will cost the car owner about $1 per unit more than the former type, will benefit the service station operator, by simplifying adjustment, reducing headlight inventory, and raising this automotive necessity high in the list of profitable items handled by the oil marketer. The market for the new lights will open up after the new cars have been on the road for a few months.

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Markets

Mid-Continent

TULSA, Nov. 4.—Mid-Continent lube prices continued their upward climb the past week when three refiners reported advancing their bright stock and neutral oil quotations 0.25 to 1.50 cents a gallon. The 1.5-cent advances were made in quotations for higher viscosity neutral oils. For the most part, higher quotations reported last week resulted in a widening of the price ranges for these oils.

All Mid-Continent lubes were in good demand following a slight letup in activity in late October, which, however, did not cause any accumulation of stocks, it was said. Refiners said they were as "short as ever" and were limiting offerings to regular customers. One large supplier said he had had to buy bright stock in the open market to meet his commitments. Export shipments were said to have picked up with freer movement of boats from Gulf ports.

Natural gasoline shipments to Gulf Coast refiners also quickened as result of improved shipping conditions at the Gulf, reports indicated. Quotations and sales prices for Grade 26-70 were reported at 4 cents f.o.b. Breckenridge and 4.25 cents f.o.b. Group 3.

Refined gasoline movement was reported off slightly as motor fuel consumption began its seasonal slump. For the most part, however, refiners said they had made no changes in their quotations.

California

LOS ANGELES, Nov. 4.—Except for a 5-cent increase in Bunker "C" fuel oil, advancing the low to 75 cents a barrel, West Coast quotations for refined products were unchanged, according to reports the past week.

Inquiry for 400,000 barrels of fuel and diesel oil, in deep tank lots, was said to have been made by the French line, which reportedly bid $0.825 per barrel for fuel oil and $1.425 for diesel. Indications were that the deal was closed at these prices, but the report could not be verified.

Some companies were offering 1940 contracts for fuel oil at $0.90 and diesel at $1.45, according to one source.

The "W. H. Berg," Standard Oil Co. of California's giant new turbine tanker, and the Kurosio Maru, Japanese tanker, sailed from Los Angeles this week, according to reports. Standard's tanker was said to be loaded with 90,000 barrels of gasoline for Vladivostok. The Japanese tanker reportedly lifted 90,000 barrels of fuel destined for the Japanese naval base at Tokuyama.

Another tanker said to be loading on the West Coast is the new Norwegian tanker Polartank, under charter to the Royal Dutch Shell interests. The Norwegian tanker Iselin is due Nov. 11 from Malmo, Sweden, according to reports, and will enter charter service between San Pedro and Chile.

N. P. N. Refinery Index

The Refinery Index shown below represents the return in cents per barrel (42 gallons) from refining a barrel of 36 gravity Mid-Continent crude into its various principal products. The index is calculated by subtracting the current price of crude at the well from the average price of refined products sold at current quoted Oklahoma refinery market prices.

Date	Margin
Nov. 1	59.5
Month ago	59.7
Year ago	45.7

Eastern

NEW YORK, Nov. 4. — Prices for some lower octane grades of gasoline were reduced slightly at a few points along the Atlantic seaboard the past week. At the same time, quotations reported for 72-74 octane at Philadelphia and Norfolk were up 0.25 cent when a Philadelphia supplier reported advancing his quotation to 6.75 cents, with only one Norfolk supplier reported quoting 7.75 cents for this grade.

Prices for 65 octane and above gasoline were down 0.25 cent at Baltimore to 6.25 cents low, and the same grade was down 0.5 cent to 6.50 cents at Savannah and Jacksonville when suppliers at these points reported revisions in their quotations.

Demand for gasoline in most districts along the Atlantic Coast was said to be "quiet but steady."

Quotations for kerosine generally were reported unchanged. Reports of price shading were encountered at some points especially Providence.

N. P. N. Gasoline Index

	Dealer T.w.	Tank Car
	Cents per Gallon	
Nov. 6	9.84	6.26
Month ago	9.74	6.21
Year ago	9.69	5.59

Dealer index is an average of "undivided" dealer prices, ex-tax, in 50 cities.

Tank car index is a weighted average of 9 wholesale markets for regular-grade gasoline.

Gulf

NEW YORK, Nov. 4.—Quotations reported for some grades of GCRA specification motor fuel were down 0.125 to 0.25 cent the past week. Prices for Mid-Continent lubes in barrels at the Gulf were reported up 0.5 cent.

Movement of products was said to be virtually at a standstill, although reports were widespread late in the week that a "considerable quantity" of gasoline and diesel oil had been sold. Details of the transactions were not available for publication, but it was said the material moved at "good" prices. A Belgian inquiry, reported in the market, called for 2000 to 3500 tons of 62 octane gasoline and 5000 to 6000 tons of 48 diesel index gas oil for December lifting.

A GCRA refiner reported reducing his gasoline quotations 0.125 to 0.25 cent to 6.25 cents for 68 and 70 octane, and 6.375 cents for 72-74 octane leaded. Other quotations reported for these grades ranged from 6.25 to 6.50 cents. Another GCRA refiner reported withdrawing his quotations for all products and said he intended curtailing his refinery operations "to prevent any increase in gasoline stocks." Quotations for other products generally were reported unchanged.

Pennsylvania

CLEVELAND, Nov. 4.—Advances of 0.5 to 0.75 cent per pound in wax quotations and 0.125 to 0.375 cent per pound in petrolatum quotations featured the western Pennsylvania refiner market last week following a 15-cent advance in Pennsylvania crude prices. Some refiners also reported advances in their lube quotations but increased prices were not general.

Only three refiners were in the market quoting wax. They reported advancing their quotations to 6.50 cents, New York, for white crude scale. Other refiners said they were sold up for weeks in advance. "It's a question of having the material to ship fairly promptly, and not a question of price," one refiner said, adding that "buyers appear willing to pay almost any price to get the goods."

The position of petrolatums was much the same as wax, with refiners saying they were sold up in some cases until the end of the year.

Lube quotations continued to cover wide ranges with 25 pour bright stock at 24.50 to 33 cents, 25 pour 200 vis. neutral at 25 to 32 cents and 25 pour

(*Continued on page* 83)

REFINERY TANK CAR MARKETS

All prices on this page are publisher's opinion of open market quotations or sales, for spot shipment (10 to 15 days) unless otherwise stated. Prices in cents per gallon, except heavy fuel oils in dollars per barrel of 42 gallons, wax and petrolatums in cents per pound in barrels, tank car lots, FOB refineries in districts designated, except where otherwise noted. Inter-refinery and export prices not included unless so stated in the respective markets. Federal, state or municipal taxes not included. Prices quoted apply on products made from legally produced crude. Unless otherwise noted, gasoline octane ratings are determined by C.F.R. Motor method, A.S.T.M. D-357-33T; and lubricating oil specifications determined according to A.S.T.M. methods, unless otherwise noted.

Gasoline

Prices Effective	Nov. 6	Oct. 30
OKLAHOMA		
U. S. Motor: (Oct. L-3)		
62 oct. & below	4.50 – 4.75	4.50 – 4.75
63-66 oct.	4.75 – 5.0625	4.75 – 5.0625
67-69 oct.	4.75 – 5.25	4.75 – 5.25
70-72 oct.	5.25 – 5.50	5.25 – 5.50
60-62, 400 e.p.	(h) 4.50	(h) 4.50
WESTERN PENNA. REFINERS' QUOTATIONS		
Bradford-Warren:		
Motor gasoline:		
U.S. Motor (58-62°)	(e) 5.00	(e) 5.00
Min. 65 oct.	6.75	6.75
"Q" gasoline	(e) 6.75	(e) 6.75
73-74 oct. (L-3)	(e) 7.00	(e) 7.00
75-76 oct. (L-3)	(e) 7.30	(e) 7.30
Other districts:		
Motor gasoline:		
U. S. Motor (58-62° gravity):	(h) 5.00	(h) 5.00
"Q" gasoline	6.50	6.50 – 6.75
CENTRAL MICHIGAN (a)		
Str.-Run Gasoline	(c) 4.50 –4.75	(c) 4.50 –4.75
U. S. Motor: (Oct. L-3)		
67-69 oct.	(e) 6.25	(e) 6.25
70-72 oct.	7.00	7.00

Prices Effective	Nov. 6	Oct. 30
CALIFORNIA (3c tax to be added if used state)		
U. S. Motor:		
54-58 gravity, for in-state shipment	6.50 – 9.75	6.50 – 9.75
54-58 gravity, for out-side state shipment	6.50 – 9.00	6.50 – 9.00
58-61 gravity, 375-400 e.p., 65 oct. & above	7.75 – 9.75	7.75 – 9.75
N. TEX. (b)		
U. S. Motor: (Oct. L-3)		
62 oct. & below	4.50 – 4.75	4.50 – 4.75
63-66 oct.	4.75 – 5.00	4.75 – 5.00
67-69 oct.	5.00 – 5.25	5.00 – 5.25
70-72 oct.	5.25 – 5.625	5.25 – 5.625
60-62, 400 e.p.	(e) 4.50	(e) 4.50
KANSAS (For Kansas destinations only)		
U. S. Motor: (Oct. L-3)		
62 oct. & below	(e) 4.75	(e) 4.75
67-69 oct.	(e) 5.00	(e) 5.00
70-72 oct.	(e) 5.50	(e) 5.50
W. TEX. (b)		
U. S. Motor: (Oct. L-3)		
62 oct. & below	(h) 4.50 –4.75	(h) 4.50 –4.75
63-66 oct.	(h) 4.875–5.00	(h) 4.875–5.00
67-69 oct.	(h) 5.125–5.375	(h) 5.125–5.375
70-72 oct.	(h) 5.375–5.625	(h) 5.375–5.625

Prices Effective	Nov. 6	Oct. 30
CENTRAL WEST TEXAS (Prices to truck transports)		
U. S. Motor: (Oct. L-3)		
62 oct. & below	(h) 4.50	(h) 4.50
63-66 octane	(e) 5.125	(e) 5.125
66-70 octane	(i)	(i)
E. TEX.		
U. S. Motor: (Oct. L-3)		
70-72 oct.	(e) 5.00	(e) 5.00
60-62, 400 e.p.	(e) 4.75	(e) 4.75
N. LA. (For shipment to La. & Ark.)		
U. S. Motor: (Oct. L-3)		
62 oct. & below	(h) 4.75 –5.00	(h) 4.75 –5.00
63-66 oct.	(e) 5.00 –5.25	(e) 5.00 –5.25
70-72 oct. leaded	(h) 5.50 –5.75	(h) 5.50 –5.875
ARKANSAS (F.o.b. Ark. plant of one refiner, for shipment to Ark. & La.)		
U. S. Motor: (Oct. L-3)		
62 oct. & below	4.75	4.75
67-69 oct.	5.25	5.25
OHIO (S. O. Ohio quotations for statewide delivery and subject to exceptions for local price disturbances)		
70-72 oct.	7.875	7.875

(Continued on next page)

(a) Prices FOB. Central Michigan refinery group basis, for shipment within Mich. Shipments may originate at plants outside Central group. (b) For shipment to Texas and New Mexico destinations: Group 3 prices quoted for northern shipment. (c) Excluding Detroit shipment. (e) One refiner quoting. (f) Two suppliers quoting. (g) To re-sellers holding licenses. (h) Two refiners quoting. (i) No quotations reported.

MID-WESTERN TANK CAR QUOTATIONS

Prices in this Midwestern Tank Car Market table are gathered from refiners and tank car marketers or brokers from their offices located in Chicago and the surrounding territory. While the prices are quoted on a Group 3 (Oklahoma) freight rate basis, this is in accordance with the custom of the oil industry which uses Group 3 as a price basis for the ease of comparing prices even when the material originates in another refining district. Generally when prices are quoted in this Chicago market, the origin of the material is not known at the time the quotation is given, oftentimes even with the quoting refiners who have refineries in more than one refining district. All other gasoline prices are given by and for the particular refining district where the material is made and from which it is shipped.

Gasoline

Prices Effective	Nov. 6	Oct. 30
U. S. Motor: (Oct. L-3)		
62 oct. & below	4.25 – 4.75	4.25 – 4.75
63-66 oct.	4.375 – 4.75	4.375 – 4.75
67-69 oct.	4.50 – 5.125	4.50 – 5.125
70-72 oct.	4.75 – 5.375	4.75 – 5.375

Kerosine

41-43 grav. w.w.	3.50 – 4.00	3.50 – 4.00
42-44 grav. w.w.	3.625 – 4.25	3.625 – 4.25

Fuel and Gas Oils

Prices Effective	Nov. 6	Oct. 30
No. 1 p.w.	3.375 – 3.75	3.375 – 3.75
No. 1 straw	3.25 – 3.375	3.25
No. 2 straw	3.125 – 3.25	3.125 – 3.25
No. 3	3.00 – 3.125	3.00 – 3.125
No. 5	(e) $0.65	(e) $0.65
No. 6	$0.45	$0.45
Range oil	3.375 – 3.875	3.375 – 3.875

Chicago Naphtha and Solvent

Prices Effective	Nov. 6	Oct. 30
(FOB Group 3 as quoted by two Chicago sellers)		
Stoddard solvent	5.875	5.875
Cleaners' naphtha	6.375	6.375
V. M. & P. naphtha	6.375	6.375
Mineral spirits	5.375	5.375
Rubber solvent	6.375	6.375
Lacquer diluent	7.375	7.375

Daily range of gasoline prices as reported in PLATT'S OILGRAM (Week Ended Nov. 3, 1939)

U. S. Motor, (Octane Number determined according to L-3 Method in Okla., Texas and Mid-Western Districts):	Oct. 30	Oct. 31	Nov. 1	Nov. 2	Nov. 3
62 octane and below:					
Oklahoma	4.50 – 4.75	4.50 – 4.75	4.50 – 4.75	4.50 – 4.75	4.50 – 4.75
(a) North Texas	4.50 – 4.75	4.50 – 4.75	4.50 – 4.75	4.50 – 4.75	4.50 – 4.75
West Texas	(c) 4.50 –4.75	(c) 4.50 –4.75	(c) 4.50 –4.75	(c) 4.50 –4.75	(c) 4.50 –4.75
Mid-Western (Group 3 basis)	4.25 – 4.75	4.25 – 4.75	4.25 – 4.75	4.25 – 4.75	4.25 – 4.75
63-66 octane:					
Oklahoma	4.75 –5.0625	4.75 –5.0625	4.75 –5.0625	4.75 –5.0625	4.75 –5.0625
(a) North Texas	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
West Texas	(c) 4.875–5.00	(c) 4.875–5.00	(c) 4.875–5.00	(c) 4.875–5.00	(c) 4.875–5.00
Mid-Western (Group 3 basis)	4.375– 4.75	4.375– 4.75	4.375– 4.75	4.375– 4.75	4.375– 4.75
67-69 octane:					
Oklahoma	4.75 – 5.25	4.75 – 5.25	4.75 – 5.25	4.75 – 5.25	4.75 – 5.25
(a) North Texas	5.00 – 5.25	5.00 – 5.25	5.00 – 5.25	5.00 – 5.25	5.00 – 5.25
West Texas	(c) 5.125–5.375	(c) 5.125–5.375	(c) 5.125–5.375	(c) 5.125–5.375	(c) 5.125–5.375
Mid-Western (Group 3 basis)	4.50 – 5.125	4.50 – 5.125	4.50 – 5.125	4.50 – 5.125	4.50 – 5.125
70-72 octane:					
Oklahoma	5.25 – 5.50	5.25 – 5.50	5.25 – 5.50	5.25 – 5.50	5.25 – 5.50
(a) North Texas	5.25 – 5.625	5.25 – 5.625	5.25 – 5.625	5.25 – 5.625	5.25 – 5.625
West Texas	(c) 5.375–5.625	(c) 5.375–5.625	(c) 5.375–5.625	(c) 5.375–5.625	(c) 5.375–5.625
East Texas	(b) 5.00	(b) 5.00	(b) 5.00	(b) 5.00	(b) 5.00
Mid-Western (Group 3 basis)	4.75 – 5.375	4.75 – 5.375	4.75 – 5.375	4.75 – 5.375	4.75 – 5.375
Motor Gasoline, 60-64 octane:					
New York harbor	(c) 6.70	(b) 6.70	(b) 6.70	(b) 6.70	(b) 6.70
Philadelphia district	6.25 – 6.75	6.25 – 6.75	6.25 – 6.75	6.25 – 6.75	6.25 – 6.75
Baltimore district	(e) 6.25 – 6.75	(e) 6.25 – 6.75	(e) 6.25 – 6.75	(e) 6.25 – 6.75	6.25 –6.75
Motor Gasoline, 65 octane & above:					
New York harbor	6.75 – 7.00	6.75 – 7.00	6.75 – 7.00	6.75 – 7.00	6.75 – 7.00
Philadelphia district	6.50 – 6.75	6.50 – 6.75	6.50 – 6.75	6.50 – 6.75	6.50 – 6.75
Baltimore district	6.25 – 7.00	6.25 – 7.00	6.25 – 7.00	6.25 – 7.00	6.25 – 7.00
U. S. Motor, 58-62°:					
Bradford-Warren (Western Penna.)	(b) 5.00	(b) 5.00	(b) 5.00	(b) 5.00	(b) 5.00
Other districts (Western Penna.)	(c) 5.00	5.00	5.00	5.00	5.00
Motor Gasoline, Min. 65 octane:					
Bradford-Warren (Western Penna.)	6.75	6.75	6.75	6.75	6.75
"Q" Gasoline:					
Bradford-Warren (Western Penna.)	(b) 6.75	(b) 6.75	(b) 6.75	(b) 6.75	(b) 6.75
Other Districts (Western Penna.)	6.50 – 6.75	6.50 – 6.75	6.50 – 6.75	6.50 – 6.75	6.50
73-74 Octane: (L-3)					
Bradford-Warren (Western Penna.)	(b) 7.00	(b) 7.00	(b) 7.00	(b) 7.00	(b) 7.00
75-76 Octane: (L-3)					
Bradford-Warren (Western Penna.)	(b) 7.30	(b) 7.30	(b) 7.30	(b) 7.30	(b) 7.30

(a) For shipment to Texas and New Mexico destinations: Group 3 prices are quoted on northern shipment. (b) One refiner quoting. (c) Two refiners quoting. (d) No quotations reported. (e) Two suppliers quoting.

REFINERY TANK CAR MARKETS

All prices on this page are publisher's opinion of open market quotations or sales, for spot shipment (10 to 15 days). Prices in cents per gallon except heavy fuel oils in dollars per barrel of 42 gallons, tank car lots. FOB refineries in districts designated, except where otherwise noted. Inter-refinery and export prices not included, unless so stated in the respective markets. Federal, state or municipal taxes not included. Prices quoted apply on products made from legally produced crude. Unless otherwise noted, gasoline octane ratings are determined by C.F.R. Motor method, A.S.T.M. D-357-33T; and lubricating oil specifications determined according to A.S.T.M. methods, unless otherwise noted.

Natural Gasoline

(Prices to blenders on freight basis shown below. Shipments may originate in any Mid-Continent manufacturing district.)

Prices Effective	Nov. 6	Oct. 30
FOB GROUP 3		
Grade 26-70	(m)4.25	(l)4.25
FOB BRECKENRIDGE		
Grade 26-70	(m)4.00	(l) 4.00 –4.25
CALIFORNIA (F.o.b. plants in Los Angeles basin) 75-85, 350-375 e.p. for blending	5.50 – 6.00	5.50 – 6.00

Kerosine

WESTERN PENNA. REFINERS' QUOTATIONS

Bradford-Warren:		
45 grav. w.w.	4.875– 5.00	4.875– 5.00
46 grav. w.w.	(e)5.375	(e)5.375
Other districts:		
45 grav. w.w.	4.75 – 5.00	4.75 – 5.00
46 grav. w.w.	5.125	5.00 – 5.125
47 grav. w.w.	5.00 – 5.25	5.00 – 5.25
CENTRAL MICHIGAN (a)		
47-49 gravity w.w.	4.80 – 5.05	4.80 – 5.05
OKLAHOMA		
41-43 grav. w.w.	3.50 – 4.25	3.50 – 4.25
42-44 grav. w.w.	3.625– 4.625	3.625– 4.625
KANSAS (For Kansas destinations only)		
41-43 gravity w.w.	(e)4.125	(e)4.125
42-44 gravity w.w.	(e)4.375	(e)4.375
N. TEX. (b)		
41-43 grav. w.w.	(e)4.00	(e)4.00
E. TEX.		
41-43 grav. w.w.	(e)3.50	(e)3.50
N. LA. (For shipment to La. and Ark.)		
41-43 grav. w.w.	(e) 3.75 –4.00	(e) 3.75 – 4.00
ARK. (F.o.b. Ark. plant of one refiner for shipment to Ark. and La.)		
41-43 grav. w.w.	4.00	4.00
CALIFORNIA		
40-43 grav. w.w.	4.50 – 6.00	4.50 – 6.00

Gas *and* Fuel Oils

WESTERN PENNA. REFINERS' QUOTATIONS

Bradford-Warren:		
36-40 gravity	(e) 4.625–4.75	(e) 4.625–4.75
Other districts: (Excluding Pittsburgh District Prices)		
36-40 gravity	4.125– 4.50	4.125– 4.375
CENTRAL MICHIGAN (a)		
P.W. Distillate	4.50	4.50
No. 3 gas oil, Str.	4.00 – 4.25	4.00 – 4.25
U.G.I. gas oil	3.50 – 3.75	3.50 – 3.75
Fuel Oils (Vis. at 100):		
500-700 Vis.	(e)3.00	(e)3.00
300-500 Vis.	3.00 – 3.25	3.00 – 3.25
100-300 Vis.	(e) 3.25 –3.50	(e) 3.25 –3.50
OKLAHOMA		
No. 1 P.W.	3.375– 3.75	3.375– 3.75
No. 1 straw	(h) 3.25 –3.50	(e)3.25
No. 2 straw	(h) 3.25 – 3.375	(h) 3.25 – 3.375
No. 2 dark	(h) 3.125–3.25	(h) 3.125–3.25
U.G.I. gas oil	(e) 3.25	(e) 3.25
28-30 grav. zero	3.00 – 3.125	3.00 – 3.125
No. 6	(e)$0.45	(e $0.45
Range oil	3.375– 3.625	3.375– 3.625
KANSAS (For Kans. destinations only).		
No. 1 p.w.	(e)3.875	(e)3.875
10-14 gravity	(n)	(n)
No. 6 fuel	(h)$0.50–$0.55	(h)$0.50–$0.55
N. TEX. (b)		
No. 1 P.W.		
E. TEX.		
No. 1 p.w.	(e)3.375	(e)3.375
N. LA. (For shipment to La. and Ark.)		
10-14 grav.	(e) $0.65–$0.70	(e) $0.65–$0.70
ARK. (F.o.b. Ark. plant of one refiner, for shipment to Ark. and La.)		
No. 2	3.375	3.375
28-30 zero	3.125	3.125
Tractor Fuel	(j)4.50	(j)4.50

Prices Effective	Nov. 6	Oct. 30
CALIFORNIA		
San Joaquin Valley:		
Heavy fuel	$0.55 –$0.75	$0.55 –$0.75
Light fuel	$0.75 –$0.85	$0.75 –$0.85
Diesel fuel (per gal.)	2.75 – 4.00	2.75 – 4.00
Stove dist. (per gal.)	3.00 – 5.00	3.00 – 5.00
Los Angeles:		
Heavy fuel	$0.55 –$0.90	$0.55 –$0.90
Light fuel	$0.65 –$1.00	$0.65 –$1.00
Diesel fuel (per gal.)	2.75 – 4.00	2.75 – 4.00
Stove dist. (per gal.)	2.75 – 5.00	2.75 – 5.00
San Francisco:		
Heavy fuel	$0.95	$0.95
Light fuel	$1.05	$1.05
Diesel fuel (per gal.)	4.50	4.50
Stove dist. (per gal.)	5.50	5.50

Note: All above heavy fuels meet Pacific specification 400; light fuel, spec. 300; Diesel fuels, spec. 200; and stove distillate, spec. 100.

Neutral Oils

WESTERN PENNA. REFINERS' QUOTATIONS

Important Note: Penna. lube prices reported by refiners as for limited sale to regular customers only.

Viscous Neutrals No. 3 col. (Viscosity at 70° F.)

200 Vis. (180 at 100°) 420-425 fl.		
0 p.t.	(e)33.50	(e)33.50
10 p.t.	(e)32.50	(e)32.50
15 p.t.	(e)31.50	(e)31.50
25 p.t.	25.00 –32.00	25.00 –32.00
150 Vis. (143 at 100) 400-405 fl.		
0 p.t.	(e)31.50	(e)31.50
10 p.t.	(e)30.50	(e)30.50
15 p.t.	(e)29.50	(e)29.50
25 p.t.	23.00 –28.00	23.00 –28.00

SOUTH TEXAS

Vis	Color		
Pale Oils: (*Vis. at 100°F.*)			
100	No. 1½-2½	5.75 – 6.00	5.75 – 6.00
200	No. 2-3	7.50 – 7.75	7.50 – 7.75
300	No. 2-3	8.00 – 8.25	8.00 – 8.25
500	No. 2½-3½	9.00 – 9.25	9.00 – 9.25
750	No. 3-4	9.50 – 9.75	9.50 – 9.75
1200	No. 3-4	9.875–10.50	9.875–10.50
2000	No. 4	10.00 –10.75	10.00 –10.75
Red Oils:			
200	No. 5-6	7.50 – 7.75	7.50 – 7.75
300	No. 5-6	8.00 – 8.25	8.00 – 8.25
500	No. 5-6	9.00 – 9.25	9.00 – 9.25
750	No. 5-6	9.50 – 9.75	9.50 – 9.75
1200	No. 5-6	9.875–10.50	9.875–10.50
2000	No. 5-6	10.00 –10.75	10.00 –10.75

Note: Red oil prices cover oils with green cast; blue cast red oils are slightly lower in some cases.

MID-CONTINENT (Vis. at 100° F.; F.o.b. Tulsa)

Pale Oils: **(0 to 10 P.P.)**

Vis.	Color		
60-85	No. 2	6.50 – 7.50	6.50 – 7.00
86-110	No. 2	6.75 – 7.50	6.75 – 7.50
150	No. 3	11.75 –13.00	11.75 –12.75
180	No. 3	13.00 –14.00	13.00
200	No. 3	13.50 –14.50	13.50
250	No. 3	14.50 –16.00	14.50
280	No. 3	15.50 –17.00	15.50 –16.25
300	No. 3	16.75 –17.50	16.50 –16.75
Red Oils:			
180	No. 5	(e)12.50	(e)12.50
200	No. 5	(h)13.00	(e)13.00
280	No. 5	14.75 –15.75	(h) 14.75–15.75
300	No. 5	(e)16.25	(e)16.25

Note: The following oils, of 15 to 25 p.p., are generally quoted these amounts under 0-10 p.p.; viscous oils, 0.5c; non-viscous, 0.25c. Viscous oils (150-300 vis.), No. 4 color, generally are quoted 0.5c above No. 5 color oils.

CHICAGO (Vis. at 100° F.

(e) Pale Oils 0 to 10 p.p.

Vis.	Color		
60-85	No. 2	8.25	8.25
86-110	No. 2	8.50	8.50
150	No. 3	12.75	12.75
180	No. 3	14.00	14.00
200	No. 3	14.50	14.50
250	No. 3	15.50	15.50

Prices Effective	Nov. 6	Oct. 30
CHICAGO (Continued)		
(e) Red Oils:		
180—No. 5	13.50	13.50
200—No. 5	14.00	14.00
250—No. 5	14.50	14.50
280—No. 5	15.50	15.50
300—No. 5	17.25	17.25

Note: Viscous oils, 15 to 30 p.p. are quoted 0.5c lower; 60-85 and 86-110 No. 2 non-viscous oils, 15 to 30 p.p., 0.25c lower. To obtain delivered prices in Chicago, add 0.25c per gal.

Cylinder Stocks

MID-CONTINENT (F.o.b. Tulsa)

Bright Stocks:		
190-200 Vis. at 210° D.	(e)27.00	(e)26.00
150-160 Vis. at 210° D:		
0 to 10 p.p.	23.00 –24.00	23.00
10 to 25 p.p.	22.00 –23.00	22.00 –22.50
25 to 40 p.p.	(h) 21.50–22.00	(h) 21.50–22.00
150-160 vis. at 210° E.	21.00 –23.00	21.00 –22.00
120 Vis. at 210° D:		
0 to 10 p.p.	21.625–23.00	21.625–22.00
25 to 40 p.p.	(e)20.625	(e)20.625
600 S.R. Dark Green	(e)8.00	(e)8.00
600 S.R. Olive Green	9.00	9.00
631 S.R.	(e)19.00	(e)18.00
Black Oil	(h)4.00 –5.50	(h) 4.00 –5.50

(e) CHICAGO (Viscosity at 210°)

Unfiltered Steam Refined:		
140	10.00	10.00
160	11.00	11.00
200	12.00	12.00
Bright stocks, 160 vis. at 210, No. 8 color:		
0 to 10 p.p.	24.75	24.75
15 to 25 p.p.	23.75	23.75
30 to 40 p.p.	23.25	23.25
Filtered Cyl. Stock	14.50	14.50

Note: To obtain prices delivered in Chicago, add 0.25c per gal.

WESTERN PENNA. REFINERS' QUOTATIONS

Important Note: Penna. lube prices reported by refiners as for limited sale to regular customers only.

600 S.R. filterable	14.50 –18.00	14.50 –17.00
650 S.R.	16.00 –20.00	16.00 –20.00
600 fl.	16.50 –21.00	16.50 –21.00
630 fl.	20.00 –24.00	20.00 –24.00
Brt. stk, 145-155 vis. at 210°, 540-550 fl., No. 8 col.		
10 p.t.	28.00 –36.00	28.00 –33.00
15 p.t.	27.00 –35.00	27.00 –32.00
25 p.t.	24.50 –33.00	24.50 –30.00

Petrolatums

WESTERN PENNA. (Bbls., carloads; tank cars, 0.5c per lb. less. One refiner reports he equalizes freight with nearest refinery to destination).

Snow White	7.625– 8.00	7.625
Lily White	6.625– 7.00	6.50 – 6.625
Cream White	5.625– 6.00	5.50 – 5.625
Light Amber	3.875– 4.25	3.75 – 4.125
Amber	3.625– 4.00	3.50 – 3.875
Red	3.50	3.125– 3.50

Wax

WESTERN PENNA. REFINERS' QUOTATIONS

In bbls., carloads, N. Y

122-124 A.m.p., w.c. scale	(e)6.50	(e)6.00
124-126 A.m.p., w.c. scale	(h)6.50	(h) 6.00 –6.25

OKLAHOMA (In bbls. or burlap bags, carloads)

124-126 A.m.p., w.c. scale	(h) 5.75 –6.00	(h) 5.75 –6.00

CHICAGO QUOTATIONS (FOB Chicago district refinery of one refiner, in bags or slabs loose, carloads. Melting points are E.M.P. (A.S.T.M.) methods; add 3° F. to convert into A.m.p.)

Fully refined:		
122-124 (bags only)	5.40	5.40
125-127	5.60	5.60
127-129	5.85	5.85
130-132	6.15	6.15
132-134	6.40	6.40
135-137	7.15	7.15

(a) Prices FOB Central Michigan refinery group basis, for shipment within Mich. Shipments may originate at plants outside Central group. (b) For shipment to Texas and New Mexico destinations: Group 3 prices quoted on northern shipments. (e) Excluding Detroit shipment. (e) One refiner quoting. (f) No quotations reported. (g) To resellers holding licenses. (h) Two refiners quoting. (j) For shipment to Ark. points only. (k) Two suppliers quoting. (l) Quotations. (m) Sales. (n) No quotations reported.

TANK WAGON MARKETS

Tank car, tank wagon, dealer, and service station prices for gasoline **do not include taxes;** *they do, however, include inspection fees as shown in general footnote. Gasoline taxes, shown in separate column, include* 1c *federal, and state taxes; also city and county taxes as indicated in footnotes. Kerosine tank wagon prices also do not include taxes; kerosine taxes, where levied, are indicated in footnotes. Dealer discounts are shown in footnotes; for commercial consumer discounts, see NPN for March 29, April 12, April 19 and June 7, 1939, or write to N.P.N. These prices in effect Nov. 6, 1939, as posted by principal marketing companies at their headquarters offices, but subject to later correction.*

S. O. New Jersey

Essolene
(*Regular Grade*)

	Consumer Tank Car	Dealer T.W.	Gasoline Taxes	Kerosine T.W.
*Atlantic City, N. J.	7.6	8.7	4	7.6
*Newark, N. J.	7.6	8.7	4	7.6
Annapolis, Md.	8.35	9.35	5	9.50
Baltimore, Md.	7.75	8.75	5	7.5
Cumberland, Md.	9.15	10.15	5	10
Washington, D. C.	8.0	9	3	9.5
Danville, Va.	8.95	11.45	6	12.9
Norfolk, Va.	7.75	10.25	6	11
Petersburg, Va.	8.05	10.55	6	11.7
Richmond, Va.	8.05	10.55	6	10.7
Roanoke, Va.	9.25	11.75	6	11
Charleston, W. Va.	8.55	11.05	6	12.6
Parkersburg, W. Va.	7.85	9.85	6	11.2
Wheeling, W. Va.	8.85	10.75	6	12.2
Charlotte, N. C.	9.9	11.4	7	11.8
Hickory, N. C.	10.45	11.95	7	12.3
Mt. Airy, N. C.	10.3	11.8	7	12.2
Raleigh, N. C.	9.65	11.15	7	11.5
Salisbury, N. C.	9.95	11.45	7	11.9
Charleston, S. C.	7.75	10.25	7	10.6
Columbia, S. C.	8.6	11.1	7	11.5
Spartanburg, S. C.	9.3	11.8	7	12.2

Discount to undivided dealers on Essolene: thru territory, except New Jersey points, which see in "Note" below: Dealer t.w. price less 0.5c per gal.

*Effective Sept. 14, 1939, S. O. New Jersey posted a minimum retail resale price of 11.9c thru New Jersey.

Note: While the above posted prices continue at Atlantic City and Newark, N. J., dealers will pay a net price of 8.6c per gal. for Essolene. Dealers having pumps marked only, Esso, Essolene and "Standard" White gasoline will pay 8.1c per gal. for Essolene.

Kerosine Discount: 1c off t.w. price for 25 gals., or more, under contract thru territory (Baltimore City contract not necessary) except no discount in state of New Jersey.

Socony-Vacuum Oil Co., Inc.

(S. O. New York Division)

Socony Mobilgas
(*Regular Grade*)

	Consumer Tank Car	"Split" Dealer T.W.	Gasoline Taxes	Kerosine T.W.
Metropolitan N.Y.City: Boroughs of Manhattan, Bronx and Brooklyn (Kings and Queens)	7.6	8.9	*5	8.00
Borough of Richmond (Staten Is.)	7.6	8.9	*5	8.00
Albany, N. Y.	7.5	9.6	5	7.8
Binghamton, N. Y.	8.8	10.4	5	8.80
Buffalo, N. Y.	8.1	9.5	5	7.6
Jamestown, N. Y.	7.7	9.5	5	7.7
Plattsburg, N. Y.	8	10.4	5	8.40
Rochester, N. Y.	8.3	10	5	8.4
Syracuse, N. Y.	8.1	9.5	5	8.30
Bridgeport, Conn.	7.7	8.8	4	7.5
Danbury, Conn.	8.2	9.6	4	8.50
Hartford, Conn.	7.8	9.3	4	7.90
New Haven, Conn.	7.7	8.8	4	8.00
Bangor, Me.	7.8	10	5	8.10
Portland, Me.	7.5	9.3	5	8.00
Boston, Mass.	7.4	9	4	8.00
Concord, N. H.	8.3	10.5	5	8.60
Lancaster, N. H.	9.1	11.5	5	9.40
Manchester, N. H.	8.2	10	5	8.40
Providence, R. I.	7.4	9.3	5	8.00
Burlington, Vt.	8	10.2	5	8.20
Rutland, Vt.	8.4	10.5	5	8.40

*Plus 2% city sales tax computed at time of each sale.

Discount to undivided dealers: 0.5c less than "split" dealer t.w.

Atlantic Refining

Atlantic White Flash Gasoline
(*Regular Grade*)

	Commercial Tank Car	Dealer T.W.	Gasoline Taxes	Kerosine T.W.
Philadelphia, Pa.	8	9	5	10
Pittsburgh	8	9.5	5	10.5
Allentown	8	9.5	5	10.5
Erie	8	9.5	5	10
Scranton	8.5	10	5	10.5
Altoona	8	10	5	10.5
Harrisburg	8	9.5	5	10.5
Williamsport	8.5	10	5	10.5
Dover, Del.		9.5	5	10.5
Wilmington		9	5	9.75
Boston, Mass.		9	4	8
Springfield, Mass.		9.5	4	8.2
Worcester, Mass.		9.8	4	8
Fall River, Mass.		9	4	8
Hartford, Conn.		9.3	4	8
New Haven, Conn.		8.8	4	8
Providence, R. I.		9.3	4	8
Atlantic City, N. J.		8.6	4	7.6
Camden, N. J.		8.6	4	7.6
Trenton, N. J.		8.6	4	7.6
Annapolis, Md.		9.35	5	9.5
Baltimore, Md.		8.75	5	8.5
Hagerstown, Md.		9.85	5	10
Richmond, Va.		10.55	6	10.7
Wilmington, N. C.		10.35	7	10.8
Brunswick, Ga.		10	7	*11
Jacksonville, Fla.		8	8	10

*Georgia has kerosine tax of 1c per gal., not included in above price.

Discount to undivided dealers: Dealer t.w. less 0.5c per gal. except in Georgia and Florida, dealer t.w. and undivided dealer price is same.

Discounts: At Scranton, Pa., 1c per gal. voluntary discount allowed to dealers only, effective July 8, 1939.

Kerosine discount: Thru Pennsylvania and Delaware, 2c per gal. off t.w. price on t.w. deliveries of 25 gals. or more at one time, effective since Oct. 29, 1936.

S. O. Ohio

Sohio X-70 Gasoline
(Regular Grade)

	Consumer T.W.	†Divided Dlr.	‡S.S.	Gasoline Taxes	Kerosine T.W.
Ohio, Statewide	11	10	13	5	*12
Akron	11	9	13	5	*8.5
Cincinnati	11	10	12	5	*12
Cleveland	11	10	13	5	*12
Columbus	11	10	12	5	*12
Dayton	11	10	12	5	*12
Marietta	11	9.5	12	5	*12
Portsmouth	11	10	13	5	*12
Toledo	11	9	11.5	5	*12
Youngstown	11	10	12	5	*11.5

Renown Gasoline
(Third Grade)

Ohio, Statewide	11	10	13	5	....
Akron	11	9	11	5	....
Cincinnati	11	10	12	5	....
Cleveland	11	10	13	5	....
Columbus	11	10	12	5	....
Dayton	11	10	12	5	....
Marietta	11	9.5	12	5	....
Portsmouth	11	10	13	5	....
Toledo	11	9	11.5	5	....
Youngstown	11	10	12	5	....

Note: Prices at other Ohio points may be obtained by writing NPN.

*Ohio has kerosine tax of 1c per gal., not included in above prices.

†This price also to authorized agents, exclusive of 0.5c rental.

‡Prices are at company-operated service stations.

Discount to undivided dealers: 0.5c less than divided dealer t.w.

S. O. Kentucky

Crown Gasoline
(*Regular Grade*)

	Consumer T.W.	Net Dlr.	Gasoline Taxes	Kerosine T.W.
Covington, Ky.	12	9	6	9.5
Lexington, Ky.	13.5	10.5	6	10
Louisville, Ky.	12.5	9.5	6	9
Paducah, Ky.	12.5	9.5	6	9
Jackson, Miss.	12.5	9.5	7	*9.5
Vicksburg, Miss.	12.5	9.5	7	*9
Birmingham, Ala.	13.5	10.5	*8	9
Mobile, Ala.	12.5	9.5	*9	9
Montgomery, Ala.	13.5	10.5	*9	*10
Atlanta, Ga.	13	10	7	*9
Augusta, Ga.	13.5	10.5	7	*9
Macon, Ga.	14	11	7	*9.5
Savannah, Ga.	12.5	9.5	7	*8
Jacksonville, Fla.	11	8	8	8.5
Miami, Fla.	11.5	8.5	8	7
Pensacola, Fla.	12.5	9.5	*9	8.5
Tampa, Fla.	12.5	9.5	8	8.5

Kyso Gasoline
(*Third Grade*)

Covington, Ky.	10.5	8	6	....
Lexington, Ky.	12	9.5	6	....
Louisville, Ky.	10	7.5	6	....
Paducah, Ky.	10.5	8	6	....
Jackson, Miss.	11	8.5	7	....
Vicksburg, Miss.	11	8.5	7	....
Birmingham, Ala.	11.5	9	*8	....
Mobile, Ala.	10	7.5	*9	....
Montgomery, Ala.	11.5	9	*9	....
Atlanta, Ga.	10.5	8	7	....
Augusta, Ga.	12	9.5	7	....
Macon, Ga.	12	9.5	7	....
Savannah, Ga.	10.5	8	7	....
Jacksonville, Fla.	9.5	7	8	....
Miami, Fla.	10	7.5	8	....
Pensacola, Fla.	10.5	8	*9	....
Tampa, Fla.	11	8.5	8	....

Discounts to all tank wagon consumers: Effective Jan. 4, 1937, thru territory, on Crown gasoline, 3c per gal. below consumer t.w. price; on Kyso, 2.5c below, regardless of quantity purchased, per month

**Taxes*: In the tax column is included these city and county gasoline taxes at the following points: Mobile, 2c city; Birmingham, 1c city; Montgomery, 1c city and 1c county; Pensacola, 1c city. Georgia and Montgomery, Ala. have kerosine taxes of 1c per gal., and Mississippi 0.5c, not included in above prices.

S. O. Indiana

Red Crown (*Regular Grade*)
Stanolind (*Third Grade*)

	Red Crown Cons. T.W.	Dealer Prices Red Crown	Dealer Prices Stanolind	Gasoline Taxes	Kerosine T.W.
Chicago, Ill.	11.1	9.1	6.9	4	10
Decatur, Ill.	11.1	8.1	6	4	8.5
Joliet, Ill.	11.1	9.6	8.1	4	10
Peoria, Ill.	11.1	9.6	9.1	4	10
Quincy, Ill.	10.9	9.4	8.5	4	9.8
Indianapolis, Ind.	11.8	10.3	8.9	5	*10.7
Evansville, Ind.	11.6	10.1	9.4	5	*10.5
South Bend, Ind.	11.8	10.3	9.6	5	*10
Detroit, Mich.	9.6	7.4	7.35	4	7.6
Grand Rapids, Mich.	9.5	8	7.5	4	9.7
Saginaw, Mich.	10.8	9.3	8.6	4	9.3
Green Bay, Wis.	11.9	10.4	9.9	5	10
Milwaukee, Wis.	11.3	9.8	9.3	5	10.2
La Crosse, Wis.	11.5	10	9.5	5	10.4
Minneapolis-St. Paul	11.5	10	9.5	5	10.4
Duluth, Minn.	11.9	10.4	9.9	5	10.8
Mankato, Minn.	11.5	10	9.5	5	9.4
Des Moines, Ia.	10.9	9.4	7.4	4	*9.8
Davenport, Ia.	11.1	9.6	8.4	4	*10
Mason City, Ia.	11.3	9.8	6.9	4	*10.2
St. Louis, Mo.	10.7	9.2	7.5	*4	8
Kansas City, Mo.	10.4	8.9	6.9	*4	8
St. Joseph, Mo.	10.4	8.9	8.4	4	7.9
Fargo, N. D.	12.7	11.2	10.7	5	11.6
Huron, S. D.	12	10.5	10	5	10.9
Wichita, Kans.	9.3	6.6	5.5	4	7.4

*Taxes: in the tax column is included these city and state gasoline taxes at following points: Kansas City, St. Joseph and St. Louis, 1c city tax. Kerosine taxes: Indiana has 4c, Iowa 3c per gal. state tax, not included in above prices.

S. O. Nebraska

Standard Red Crown Gasoline
(*Regular Grade*)

	T.W. Dealer	Gasoline Taxes	Kerosine T.W.
Omaha, Neb.	10.9	9.2	6	9.8
McCook	10.5	8.4	6	9
Norfolk	11.3	9.8	6	9.5
North Platte	11.8	10.3	6	10
Scottsbluff	12.5	9.5	6	11.4

S. O. Louisiana

Essolene
(*Regular Grade*)

	Consumer Tank Car	Dealer T.W.	Gasoline Taxes	Kerosine T.W.
Little Rock, Ark.	7.75	10.25	7.5	10
Alexandria, La.	7.25	9.75	8	*11.5
Baton Rouge, La.	7.25	9.75	8	*9.5
New Orleans, La.	7.25	9.75	*10	*9
Lake Charles, La.	7.25	9.75	8	*11.5
Shreveport, La.	6	8.5	8	*10
Lafayette, La.	7.5	10	8	*10
Bristol, Tenn.	10.75	12	8	13
Chattanooga, Tenn.	10	12	8	12
Knoxville, Tenn.	10.5	13	8	13
Memphis, Tenn.	8.5	11	8	11
Nashville, Tenn.	9.5	12	8	11

*Taxes: New Orleans gasoline tax includes 7c state, 1c federal, and 2c parish tax. Louisiana has kerosine tax of 1c per gal.; in addition New Orleans has 1c parish tax, none of which are included in above prices.

Price basis to dealers: Undivided dealers get dealer price, less 0.5c.

Above prices include these inspection fees on both gasoline and kerosine unless otherwise specified, per gallon, figured on basis of 50 gallons per barrel:
Alabama, 1/40c on gasoline. 1/2c on kerosine; Arkansas, 1/5c per gal. in a single barrel. 1/20c per gal. in bulk; Florida 1/8c; Illinois, 3/100c; Indiana, 1/5c per gal. in lots up to 25 bbls.; 2/25c per gal. in lots of 25 bbls. or more; Kansas, 1/50c, (3/50c can be charged to meet inspection department expenses); Louisiana, 1/32c; Minnesota, 1/25c; Missouri, 3/100c; Nebraska, 3/100c; Nevada, gasoline, 1/20c; North Carolina, 1/4c; North Dakota, 1/20c; Oklahoma, 2/25c per gal. lots of more than 50, in bbls., 1/5c in lots less than 50 bbls.; South Carolina, 1/8c; South Dakota, 1/10c; Tennessee, 2/5c; and Wisconsin, 3/100c.
Kerosine inspection fee only: Iowa, 3/50c; Michigan, 1/5c per gal.

TANK WAGON MARKETS

Tank car, tank wagon, dealer, and service station prices for gasoline do not include taxes; they do, however, include inspection fees as shown in general footnote. Gasoline taxes, shown in separate column, include 1c federal, and state taxes; also city and county taxes as indicated in footnotes. Kerosine tank wagon prices also do not include taxes. kerosine taxes, where levied, are indicated in footnotes. Dealer discounts are shown in footnotes; for commercial consumer discounts, see NPN for March 29, April 12, April 19 and June 7, 1939, or write to NPN. These prices in effect Nov. 6, 1939, as posted by principal marketing companies at their headquarters offices, but subject to later correction.

Humble Oil & Refining Co.

Humble Motor Fuel
(Regular Grade)

	*T.W.	S.S.	Gasoline Taxes	Kerosine T.W.
Dallas, Tex	7	11	5	8
Ft. Worth, Tex	9	13	5	7
Houston, Tex	9	13	5	8
San Antonio, Tex	9.5	13.5	5	8

Thriftane
(Leaded, 67 Octane, Purple Gasoline)

Dallas	5.5	9	5	
Ft. Worth	7.5	11	5	
Houston	7.5	11	5	
San Antonio	8	11.5	5	

U. S. Motor Gasoline
(Third Grade)

Dallas, Tex	5.5	..	5	
San Antonio, Tex	8	..	5	

*These tank wagon prices apply to all classes of dealers and consumers.

Continental Oil

Conoco Bronz-z-z (Regular Grade)

	††T.W.	Dealer	Gasoline Taxes	Kerosine ‡T.W.
Denver, Col	10.5	..	5	11.5
Grand Junction, Col	13.5	..	5	15
Pueblo, Col	11	..	5	9
Casper, Wyo	12.5	..	5	11.5
Cheyenne, Wyo	10.5	..	5	13
Billings, Mont	12.5	..	6	13
Butte, Mont	14	..	6	15.5
Great Falls, Mont	13.5	..	6	15.5
Helena, Mont	14.5	..	6	15.5
Salt Lake City, Utah	12.5	12.5	5	16
Boise, Ida	**15.1	**15.1	6	18
Twin Falls, Ida	**15.1	**15.1	6	18
Albuquerque, N. M.	10.5	10.5	†6.5	10
Roswell, N. M	9	9	†6.5	8
Santa Fe, N. M	10.5	10.5	*7	10
Ft. Smith, Ark	9.5	..	5	7.5
Little Rock, Ark	9.75	..	7.5	8
Texarkana, Ark	9	..		8
Muskogee, Okla	7	..	5	7
Oklahoma City, Okla	6	..	5	6.5
Tulsa, Okla	7	..	5	7

Demand Gasoline
(Third Grade)

Denver, Col	9.5	..	5	....
Grand Junction, Col	12.5	..	5	....
Pueblo, Col	10	..	5	....
Casper, Wyo	11.5	..	5	....
Cheyenne, Wyo	9.5	..	5	....
Billings, Mont	11.5	..	6	....
Butte, Mont	11	..	6	....
Great Falls, Mont	11.5	..	6	....
Helena, Mont	13.5	..	6	....
Salt Lake City, Utah	11.5	11.5	5	....
Boise, Ida	**14.1	**14.1	6	....
Twin Falls, Ida	**14.1	**14.1	6	....
Albuquerque, N. M.	8.5	8.5	†6.5	....
Roswell, N. M	8	8	†6.5	....
Santa Fe, N. M	9.5	9.5	*7	....
Ft. Smith, Ark	7	..	5	....
Little Rock, Ark	7.5	..	7.5	....
Texarkana, Ark	6.5	..	5	....
Muskogee, Okla	6	..	5	....
Oklahoma City, Okla	5.5	..	5	....
Tulsa, Okla	5	..	5	....

†Includes city tax of 0.5c.
*Includes 1c city tax.
‡Prices are in t.w. deliveries to consumers and dealers.
**Prices include 0.1c to cover 1-mill tax for toll bridges.
††T.w. prices in all states except Utah, Idaho and New Mexico are to consumers and dealers.

S. O. California

Standard Gasoline
(Regular Grade)

	T.W.	S.S.	Gasoline Taxes	Kerosine T.W.
San Francisco, Cal	13.5	14.5	4	11.5
Los Angeles, Cal	13	14	4	10
Fresno, Cal	14.5	15.5	4	12.5
Phoenix, Ariz	14	15	6	*12.5
Reno, Nev	15.5	16.5	5	13.5
Portland, Ore	14	15	6	13.5
Seattle, Wash	14	15	6	†13.5
Spokane, Wash	15.5	16.5	6	†16.5
Tacoma, Wash	14	15	6	†13.5

Flight Gasoline
(Third Grade)

San Francisco, Cal	12	13	4	....
Los Angeles, Cal	11.5	12.5	4	....
Fresno, Cal	13	14	4	....
Reno, Nev	14	15	5	....
Phoenix, Ariz	11	12	6	....
Portland, Ore	12.5	13.5	6	....
Seattle, Wash	12.5	13.5	6	....
Spokane, Wash	13	14	6	....
Tacoma, Wash	12.5	13.5	6	....

*Arizona has kerosine tax of 5c per gal., not included in above prices.

†Washington has 0.25c per gal. tax on kerosine sales, not included in above prices.

Discount to 100% dealers, thru territory, off posted t.w. prices, on gasolines: on Standard Ethyl, Standard Gasoline and Stanavo Aviation, 3c per gal.; on Flight gasoline, 2c.

Canada

PRICES OF IMPERIAL OIL LTD.
Per Imperial Gallon, which is 1.2 U. S. Gallons
3-Star Imperial Gasoline
(Regular Grade)

	T.W.	Gasoline Taxes	Kerosine T.W.
Hamilton, Ont	15.5	8	16
Toronto, Ont	15.5	8	16
Brandon, Man	21	7	22
Winnipeg, Man	19.5	7	20.5
Regina, Sask	18.5	7	20.5
Saskatoon, Sask	21	7	23
Edmonton, Alta	18.9	7	20.9
Calgary, Alta	16	7	18
Vancouver, B. C	16	7	23
Montreal, Que	15	8	15.5
St. John, N. B	14.5	10	18.5
Halifax, N. S	14.5	10	18.5

Discounts to undivided dealers, 1c off t.w. price, except Maritime Provinces where undivided dealers pay t.w. price. Divided dealers pay t.w. price, thru territory.

Aviation Gasoline

Following are tank car, tank wagon or dealer prices, as indicated, of aviation gasoline in several marketing territories.

S. O. OHIO
Thru Ohio
Esso Aviation

	Consumer T.W.	Gasoline Taxes
74 octane	16	5
80 octane	17	5
87 octane	18	5

Discounts: For delivery on contract to hangar operators and resellers: 2c below consumer posted t.w. price, shown above.

S. O. INDIANA
Stanavo Ethyl Aviation Gasoline
73 Octane Number

Chicago, Ill	14.9	
Detroit, Mich	16.5	4
Milwaukee, Wis	15.1	5
Minneapolis, Minn	15.3	5
St. Louis, Mo	14.5	3
Kansas City, Mo	14.2	*4
Fargo, N. D	16.5	4
Huron, S. D	15.8	5

*Includes 1c city tax.

HUMBLE OIL & REFINING CO.
74 Octane Aviation Gasoline, Clear

	Tank Car
FOB Baytown, Tex	8.5

CONTINENTAL OIL CO.
Conoco Special Gasoline

	T.W. & Dealer Price	Gasoline Taxes
Denver, Colo	15	5
Cheyenne, Wyo	15.5	5
Helena, Mont	22.5	6
Salt Lake City, Utah	18	5
Albuquerque, N. M	14	*6.5

*Includes city tax of 0.5c.

S. O. CALIFORNIA
Stanavo Aviation Gasoline

	T.W.	
Phoenix, Ariz	17.5	6
Los Angeles, Cal	15	4
San Francisco, Cal	15.5	4
Reno, Nev	17.5	5
Portland, Ore	16	6
Seattle, Wash	16	6
Spokane, Wash	19	6

Note: For discounts, etc., see note under Standard and Flight gasoline above.

Naphtha (In Tank Wagon)

S. O. NEW JERSEY

	Posted Tank Wagon Prices Mineral Spirits	V.M. & P.
Newark, N. J	11.5	13.5
Baltimore, Md	15.5	....
Washington, D. C	15	....

Discounts: Buyers taking following quantities at one time, get these discounts: Newark, 2c per gal. on 200 gals. or more; less than 200 gals., 0.5c higher price. Baltimore 2c off on 25 to 100 gals. and 3c on over 100 gals. Washington, 2c off to contract buyers.

SOCONY-VACUUM OIL CO.

Buffalo, N. Y	11.5	12.5
*New York City	9.5	10.5
Rochester, N. Y	12.5	12.5
Syracuse, N. Y	12.5	15
Boston, Mass	11.5	11.5
Bridgeport, Conn	11.5	12
Hartford, Conn	11	11.5
Providence, R. I	11.5	12.5

*Prices apply to consumers only in quantities over 1,000 gals. annually. For quantities under 1,000 gals. annually, add 0.5c per gal.

ATLANTIC REFINING CO.

Philadelphia, Pa	12	14.5
Lancaster, Pa	13.5	16
Pittsburgh, Pa	14.5	14.5

Note: Prices for Mineral Spirits also apply to Stoddard Solvent; and prices for V.M.&P. Naphtha apply also to Light Cleaners Naphtha.

Discounts: Philadelphia, 200 gals. or more at one time, 2c per gal. less. Lancaster, contract buyers taking 1,000 gals. or more per year, one drum up, 2c per gal. less; non-contract buyers, 200 gals. or more at one time, 2c per gal. less. Pittsburgh, 500 gals. or more at one time, 2c.

S. O. OHIO

	S.R. Solvent	V.M.&P. Naphtha
Thru Ohio	12.5	13

Note: V.M.&P. naphtha prices also apply on Dry Cleaners naphtha, special Varnolene, Varnolene and Sohio Solvent. Discounts to contract consumers off t.w. price: 300 to 999 gals., 0.5c; 1,000 to 2,499 gals., 0.75c; 2,500 to 4,999 gals., 1c; 5,000 or more gals., 1.5c.

S. O. INDIANA
(Prices include state and federal taxes)

	Oleum Spirits	V.M.&P. Naphtha	Stanisol
Chicago, Ill	16.2	16.5	15.9
Detroit, Mich	19.2	18.2	19.7
Kansas City, Mo	13.9	14.9	14.4
St. Louis, Mo	14.2	15.2	12.9
Milwaukee, Wis	18.8	19.8	19.3
Minneapolis, Minn.	19	20	17.7

Note: All prices, with exception of Missouri points, include state tax. Prices shown are base prices, before discounts.

Naphtha (In Tank Cars)

In Tank Cars (F. o. b. refinery or seaboard terminal except Ohio, delivered price.)

	V.M.&P. Naphtha	Mineral Spirits
Baltimore	9.50	8.50
New York Harbor	9.9.5	8.75-9
Philadelphia district	10	8.25-9
Boston	9.5	9.5
Providence	9.5	9.5
†Ohio points, delivered	8.75	*1.25

*This is on rubber solvent.
†Ohio prices are those of S. O. Ohio. Its prices for D.C. naphtha, special Varnolene, Varnolene and Sohio Solvent are same as for V.M.&P.

Price Changes

Dates and amounts of changes. See table for full current prices.

S. O. New Jersey—Kerosine:
Norfolk t. w. up 1c, Nov. 1.
Baltimore t. w. up 0.5c, Oct. 31.

Socony-Vacuum Oil—Socony Mobilgas:
Albany split dealer t. w. up 0.4c, Oct. 31.
Burlington split dealer t. w. up 0.7c, Oct. 31.
Rutland split dealer t. w. up 1c, Oct. 31.

Atlantic Refining—Kerosine:
Baltimore up 0.5c, Oct. 31.
Jacksonville cut 0.5c, Oct. 31.

S. O. Indiana—Red Crown and Stanolind:
Detroit Red Crown dealer price cut 0.7c, and Stanolind dealer price cut 0.25c, Oct. 31.

S. O. Nebraska—Red Crown Gasoline:
McCook dealer price cut 1.8c, Nov. 1.
Omaha dealer price cut 0.2c, Nov. 3.

Humble Oil—Humble Motor Oil and Thriftane:
Dallas cut 2c, Oct. 31.

U. S. Motor Gasoline:
Dallas t. w. cut 1.5c, Oct. 31.

Naphtha

S. O. Ohio—All Naphthas:
T. c. up 0.25c, thru Ohio, Nov. 1.

A.A.A. Wars on Taxes

N. P. N. News Bureau

WASHINGTON, Nov. 6.—American Automobile Association's 37th annual convention will be held here Nov. 16 and 17, when 500 councillors representing AAA clubs in all parts of the country will hold a two-day meeting to discuss ways and means of improving motoring conditions. Primary among the topics to be discussed at the meeting will be the launching of a new nation-wide attack on "all means of gouging, and harassing motor car owners—such as excessive taxation, retaliatory road tolls, unduly repressive laws, fees on public travel objectives, abusive finance practices and depredations by roadside justices of the peace."

Announcing the convention, Thomas P. Henry, AAA president said: "With motor vacation travel and motor vehicle registrations at new record levels, now is the proper time to plan intelligently for the traffic demands that will be brought about by a constantly-increasing use of the automobile, also it is high time to get rid once and for all of the horse-and-buggy thinking that is responsible for so many of the motorists' woes and perplexities today.

"It is time for us to take definite steps against the anachronistic, fee-splitting J. P. whose robber-baron hold on the highways has tried the patience of motorists for all too many years; it is time to light a fire under those city officials who have failed so dismally to take any steps against the rising tide of parking strangulation; and above all, it is time to put a stop to the idea on the part of so many legislators that the automobile is a luxury article and as such is a fit object for a hundred-and-one schemes of taxes, charges, levies, fees and imposts."

Interior Secretary Ickes will address the meeting, describing points of interest throughout the country which motorists can visit. It is possible the secretary may present also a defense of the system of imposing admission and other fees at national parks and shrines, a policy which has been opposed by the AAA.

Also on the schedule is a debate on the question of limiting truck operations on week days and holidays during the peak travel season, and whether such limitation should be brought about by legislation or by voluntary action on the part of truck operators.

Coming Meetings

National Motor Truck Show, Navy Pier, Chicago, Nov. 8-16.

American Petroleum Institute, 20th annual meeting, Stevens Hotel, Chicago, Nov. 13-17.

Interstate Conference on Automotive Taxation, Western Division, sponsored by American Petroleum Industries Committee, Stevens Hotel, Chicago, Nov. 13 to 17.

Twenty-five Year Club of Petroleum Industry, first annual meeting and dinner, Stevens Hotel, Chicago, Nov. 14.

American Institute of Chemical Engineers, 32nd annual meeting, Providence-Biltmore Hotel, Providence, R. I., Nov. 15, 16, 17.

California Natural Gasoline Assn., Ambassador Hotel, Los Angeles, Nov. 17.

National Fire Protection Assn., Hotel Stevens, Chicago, Dec. 4-6.

American Society of Mechanical Engineers, Philadelphia, Pa., Dec. 4 to 7.

17th Exposition of Chemical Industries, Grand Central Palace, New York, Dec. 4 to 9.

Nebraska Petroleum Marketers, Inc., Annual Convention and Exhibit, Hotel Fontenelle, Omaha, Dec. 5-7.

New Jersey Oil Trades Assn., annual meeting and banquet, Robert Treat Hotel, Newark, N. J., Dec. 7.

Petroleum Electric Power Assn., Texas State Hotel, Houston, Tex., Dec. 14, 15.

West Central Texas Oil & Gas Assn., Abilene, Tex., some time in December.

1940

Society of Automotive Engineers, Annual meeting and Engineering Display, Book-Cadillac Hotel, Detroit, Jan. 15 to 19.

Northwest Petroleum Assn., Annual Meetings: North Dakota Division, Gardner Hotel, Fargo, N. D., Jan. 22, 23; Minnesota Division, Nicollet Hotel, Minneapolis, Jan. 25, 26.

American Institute of Mining and Metallurgical Engineers, New York, Feb. 12 to 15.

Kentucky Petroleum Marketers Assn., 14th annual meeting and convention, Brown Hotel, Louisville, Ky., Feb. 14, 15.

National Dixie Distributors, Milwaukee, Wis., Feb. 21, 22.

Wisconsin Petroleum Assn., annual meeting and equipment show, Schroeder Hotel, Milwaukee, Feb. 21, 22, 23.

Ohio Petroleum Marketers Assn., Deshler-Wallick Hotel, Columbus, O., Feb. 27, 28 and 29.

Iowa Independent Oil Jobbers' Assn., annual meeting, Hotel Fort Des Moines, Des Moines, March 2-7.

American Society for Testing Materials, Statler Hotel, Detroit, Mich., March 4-8.

American Petroleum Institute, Mid-Continent District, Division of Production, Wichita, Kan., March 14, 15.

American Petroleum Institute, Southwestern District, Division of Production, Houston, Tex., March 28, 29.

American Chemical Society, Cincinnati, Ohio, April 8-12.

American Assn. of Petroleum Geologists, Stevens Hotel, Chicago, April 10, 11, 12.

American Petroleum Institute, Eastern District, Division of Production, Columbus, O., April 11, 12.

National Petroleum Assn., 37th semi-annual meeting, Hotel Cleveland, Cleveland, O., April 18, 19.

Petroleum Industry Electrical Assn., Dallas, Tex., May 1 to 3.

Natural Gasoline Assn. of America, 19th annual convention, Hotel Tulsa, Tulsa, May 15, 16, 17.

TANK WAGON MARKETS. HEATING OILS

Prices in Effect Nov. 6, 1939

Following are posted tank wagon prices of various grades of heating oil at the points shown in various territories

Prices are in cents per gallon.

	No. 1	No. 2	No. 4
S. O. NEW JERSEY			
Atlantic City, N. J.	7 6	6 6	6 6
Newark	7 6	6 6	6 6
Annapolis, Md		6 75	
Baltimore	7 25	6 75	6 25
Washington, D. C.	7 5	7	7
Norfolk, Va.	7 25	6 25	6 25
Petersburg	7 5	6 5	
Richmond	7 5	6 5	6 5
Charlotte, N. C.	9	7 75	
Hickory		8 25	
Raleigh	9	7 5	
Charleston, S. C.	8	6 5	
Columbia	9	7 5	
Spartanburg	9 7	8 2	

SOCONY-VACUUM OIL CO. INC.
(S. O. New York Division)

	Nos. 2 & 3	No. 4
New York City	6 50	6 50
Albany, N. Y.	6 70	6 20
Rochester, N. Y.	7 70	7 70
Boston, Mass	6 70	6 70
Bangor, Me	7 10	7 10
Manchester, N. H.	7 30	7 30
Burlington, Vt.	7 40	7 40
Hartford, Conn	6 80	6 80
New Haven, Conn	6 70	6 70
Providence, R. I.	6 70	6 70

Note: Prices for No. 1 fuel in Socony-Vacuum territory same as for kerosine which see in tank wagon table for various cities; prices change with kerosine.

ATLANTIC REFINING

	Numbers 1	2	3	4	5	6
Phila., Pa.	7 75	6 25	6 25	6 25	4 00	3 25
Allentown, Pa.	8 5	6 25	6 25	6 25		
Wilmington, Del.	7 75	6 25	6 25	6 25		
Springfield, Mass.	8 2	7 2				
Worcester, Mass.	8	7		7		
Hartford, Conn.	8	6 8		6 8		

S. O. OHIO

	No. 1	No. 2	No. 3
Columbus Division and Cleveland	7 50	7 50	7 00
City of Lima	8 00	8 00	7 00
Rest of Ohio	8 00	8 00	7 50

Note: S. O. Ohio prices are for full compartment hose dumps, bucket dumps are 0.5c per gallon higher.

S. O. INDIANA
Stanolex Fuel and Furnace Oils

	No. 1 Fuel	Stanolex Furnace
Chicago	(a) 6.75	6.75
Indianapolis	....	(b) 7.8
Detroit	....	6.6
Milwaukee	8 4	7 7
Minneapolis	7 8	7 8
St. Louis	7 7	(c) 6 7
Kansas City	6 8	6 8

(a) For 400 gals. and over; 150 to 399 gals., 7.25c; 1 to 149 gals., 8.25c.
(b) Excluding 4c state tax.
(c) For 400 gals. & over; 100 to 399 gals., 7c; 1 to 99 gals., 8c.

Note: Small-lot deliveries of light fuel oils range up to 2c higher than above quotations.

Group 3 Freight Rates

To Division Headquarters Points of Standard Oil Co. of Indiana

	Gasoline-Kerosine Cents per Cwt.	Gasoline-Kerosine Cents per gal. 6.6 lbs.	Distillate-Gas Oil-Fuel Oil Cents per Cwt.	Distillate-Gas Oil-Fuel Oil Cents per gal. 7.4 lbs.
Chicago, Ill.	40	2.640	32	2.368
Decatur, Ill.	39	2.574	31	2.294
Joliet, Ill	40	2.640	32	2.368
Peoria, Ill	39	2.574	31	2.294
Quincy, Ill	36	2.376	29	2.146
Indianapolis, Ind.	48	3.168	39	2.886
Evansville, Ind.	46	3.036	57	2.738
South Bend, Ind.	53	3.498	42	3.108
Detroit, Mich.	64	4.224	51	3.774
Gd. Rapids, Mich.	62	4.092	50	3.700
Saginaw, Mich.	66	4.356	53	3.922
Green Bay, Wis.	51	3.366	41	3.034
Milwaukee, Wis.	43	2.838	34.5	2.553
LaCrosse, Wis.	46	3.036	37	2.738
Min'ap'ls-St. Paul	46	3.036	37	2.738
Duluth, Minn.	52	3.432	41.5	3.071
Mankato, Minn.	46	3.036	37	2.738
Des Moines, Ia.	36	2.376	29	2.146
Davenport, Ia.	39	2.574	31	2.294
Mason City, Ia.	42	2.772	33.5	2.479
St. Louis, Mo.	33	2.178	26.5	1.961
Kansas City, Mo.	28	1.848	22.5	1.665
St. Joseph, Mo.	28	1.848	22.5	1.665
Fargo, N. D.	63	4.158	50.5	3.737
Minot, N. D.	83	5.478	66.5	4.921
Huron, S. D.	53	3.498	42.5	3.145
Wichita				
From Ponca City	7.5	*4.95	7.5	†5.55
From Tulsa	12.5	*8.25	12.5	†9.25
From Cushing	11	*7.26	11	†8.14

*This rate also includes distillate rate at 6.6 lbs. per gal.

†This rate is exclusive of distillate which is based on 6.6 lbs. per gal. from Ponca City, Tulsa and Cushing, Okla., to Wichita. Includes only gas oil and fuel oil.

NOTE: There is no Group 3 rate to Wichita, Kans.

SEABOARD MARKETS, EXPORT AND COASTWISE

All prices on this page are publisher's opinion of open market quotations or sales, for spot shipment (10 to 15 days). In cargo markets, spot shipment is 90 days. Prices in cents per gallon, except heavy fuel oil in dollars per barrel, in tank car lots, f.o.b. refineries or seaboard terminals in districts designated, unless otherwise noted. Federal, state or municipal taxes not included. Prices quoted apply on products made from legally produced crude. Unless otherwise noted, gasoline octane ratings are determined by C.F.R. Motor method, A.S.T.M. D-357-33T; and lubricating oil specifications determined according to A.S.T.M. methods, unless otherwise noted.

Atlantic Coast Refiners' & Tanker Terminal Operators' Quotations (FOB Refineries & Terminals)

MOTOR GASOLINE

Prices Effective Nov. 6

District:	60-64 Oct.	65 Oct.	65 Oct. & Above	68-70 Oct.	72-74 Oct.
N. Y. harbor	(m)6.70	6.75 – 7.00	6.75 – 7.00	6.75 – 7.09	6.75 – 7.60
(a) N. Y. harbor	(m)6.70	6.50 – 6.75	6.50 – 6.75	6.50 – 6.75	6.65 –7.20
Philadelphia	6.25 – 6.75	6.50 – 6.75	6.50 – 6.75	6.50 – 6.75	6.75 – 8.00
Baltimore	6.25 – 6.75	6.25 – 7.00	6.25 – 7.00	(r) 6.25 –6.75	6.75 – 7.75
Norfolk	(r) 6.625–6.875	(r) 6.75 –7.00	(r) 6.75 –7.00	(r) 6.75 –7.25	(m)7.75
Wilm'ton	6.50 – 6.875	6.50 – 7.00	(r) 6.75 –7.00	6.75 – 7.25	7.00 – 7.85
Char'ston	6.625– 6.875	(r) 6.75 –7.00	(r) 6.75 –7.00	(r) 7.00 –7.25	7.50 – 7.55
Savannah	6.50 – 7.125	6.50 – 7.00	6.50 –7.00	(r) 6.75 –7.50	7.00 – 7.25
Jacksonville	6.50 – 6.875	6.50 – 7.00	(r) 6.50 –7.00	(r) 6.75 –7.25	7.00 – 7.25
Miami	(n) 6.625–6.875	(m)7.00	(m)7.00	(m) 7.00 –7.25	(m)7.25
Tampa	(p) 6.50 –6.875	(m)7.00	(m)7.00	(m) 7.00–7.25	(r)7.25
Pensacola	(n) 6.625–6.875	.....	.....	(m) 7.00 –7.25	.....
Mobile	(p) 6.00 –6.50	(m)6.50	(m)6.50	(m) 6.75 –7.00	(r)6.75
Portland	.....	(m)7.40	(r) 7.40 –7.50	.....	7.50
Boston	6.50 – 7.15	6.75 – 7.05	6.75 – 7.15	(r) 6.75 –7.00	6.75 – 7.40
Providence	6.80 – 7.15	(r) 7.00 –7.05	7.00 – 7.15	(m)7.00	7.00 – 7.40

WATER WHITE KEROSINE

District:			
N. Y. harbor	5.10	Jacksonville	5.25-5.375
(a)N. Y. harb.	5.00	Miami	(r)5.25-5.375
Phila.	5.25	Tampa	5.25-5.375
Baltimore	5.25	Pensacola	(m)5.25-5.375
Norfolk	5.25 – 5.375	Mobile	(r) 5.125-5.375
Wilm'ton, N.C.	5.25– 5.50	Portland	5.40
Charleston	(r)5.25 – 5.375	Boston	5.20
Savannah	5.25 – 5.375	Providence	5.20

FUEL OILS

	N. Y. harb.	N. Y. harb. barges
No. 1	5.10	5.00
Nos. 2-3	4.60	4.50 – 4.75
No. 4	4.60	4.50
No. 5	$1.35 –$1.65	.....
No. 6	$1.15	.....

	Phila. dist.	Balt. dist.
No. 1	5.25	5.25
Nos. 2-3	4.50	4.50
No. 4	4.25 – 4.50	4.25 – 4.50
No. 5	$1.35 –$1.57	$1.35
No. 6	$1.15	$1.15

	Bost. dist.	Prov. dist.
No. 1	5.20	5.20
Nos. 2-3	4.70	4.70
No. 4	4.70	4.70
No. 5	$1.45	$1.40 –$1.45
No. 6	$1.15	$1.15

District:	(c) Bunker C Fuel	(c) Diesel Oil
N. Y. harbor	$1.15	$1.90
Philadelphia	$1.15	$1.90
Baltimore	$1.15	$1.90
Norfolk	$1.15	$1.90
Charleston	$1.10	$1.90
Savannah	$1.10	$1.995
Jacksonville	$1.10	$1.995
Tampa	$1.05 –$1.10	$1.995
Portland	$1.15	$2.00 –$2.20
Boston	$1.15	$1.90
Providence	$1.15	$1.90

	Diesel Oil Shore Plants	Gas Oil 28-34 Gravity
N. Y. harbor	4.60	4.60 – 4.80
Philadelphia	4.50	4.50
Baltimore	4.50	4.50
Norfolk	4.50	4.50
Charleston	4.50	4.50
Jacksonville	.....	.....
Tampa	.....	.....
Portland	4.90	4.90 – 5.00
Boston	4.70	4.70 – 4.80
Providence	4.70	4.70 – 4.80

Pacific Export

(e) (Quotations at seaboard, Los Angeles, cargo lots, cents per gal., except where otherwise noted.)

Prices Effective	Nov. 6	Oct. 30
U. S. Motor, under 65 octane	5.75 – 6.25	5.75 – 6.25
400 e.p. blend, 65 oct. min.	6.00 – 6.50	6.00 – 6.50
390 e.p. blend, 66 oct.	6.125– 6.625	6.125– 6.625
390 e.p. blend, 68 oct.	6.25 – 6.75	6.25 – 6.75
375 e.p. blend, 70 oct.	6.375– 6.875	6.375– 6.875
(d) 38-40 gravity, w.w. kerosine	4.25 – 5.00	4.25 – 5.00
41-43 grav., w.w. kero.	4.50 – 5.00	4.50 – 5.00
44 grav., w.w. kero.	5.00 – 5.50	5.00 – 5.50
Cargo lots, per bbl.		
Diesel fuel, 24 & above	$1.25 –$1.35	$1.25 –$1.35
Diesel fuel, under 24	$1.15 –$1.25	$1.15 –$1.25
(f) 30-34 grav., diesel (gas oil)	$1.35 –$1.45	$1.35 –$1.45
(g) Grade C fuel	$0.60 –$0.65	$0.60 –$0.65

Prices effective	Nov. 6	Oct. 30
In Ships' Bunkers, or deep tank lots, per bbl.:		
(f) Diesel fuel	$1.35 –$1.45	$1.35 –$1.45
(g) Grade C fuel	$0.75 –$0.90	$0.70 –$0.90
Cased Goods: (Per case)		
U. S. M.	$1.45 –$1.55	$1.45 –$1.55
400 e.p. blend, under 65 oct.	$1.50 –$1.60	$1.50 –$1.60
375-400 e.p. blend, 65 oct. & above	$1.60 –$1.70	$1.60 –$1.70
(d) 40-43 grav., w.w. kero	$1.40 –$1.50	$1.40 –$1.50
Kero., p.w.	$1.35 –$1.45	$1.35 –$1.45

New York Export Quotations

(Cents per gal. in bbls. FAS New York)

CYLINDER OILS (Penna. Products)

Bright stock:		
Light, 25 p.t.	(p) 42.00–43.00	(p) 42.00–43.00
Neutral oil:		
200 3 color, 25 p.t.	(n)42.00	(n)42.00
150 3 color, 25 p.t.	(p) 40.00–42.00	(p) 40.00–42.00
600 s.r., unfilt.	(p)26.00	(p)26.00
650 s.r., unfilt.	(p) 28.50–29.00	(p) 28.50–29.00
600 fl. s.r.	(p) 30.00–30.50	(p) 30.00–30.50
630 fl., s.r.	(p)34.00	(p)34.00

Seaboard Wax Quotations

(A.S.T.M. Tests. Melting points, however, are A.M.P., 3° higher than E.M.P. Export prices, FAS, c.l. Domestic prices, FOB, refr'ies., in bags, c.l., with 0.2c discount allowed for shipment in bulk, except where noted. Scale solid; fully refined slabs in bags)

Prices Effective	Nov. 6	
	New York	
	Domestic	Export
124-6 Y.C. scale	(o)	(n)6.25
122-4 W.C. scale	(o)	(o)
124-6 W.C. scale	(o)	(n)6.25
123-5 Fully rfd.	(n)5.05	(o)
125-7 Fully rfd.	(n)5.20	(n)7.00
128-30 Fully rfd.	(h&n)5.60	(n)7.25
130-2 Fully rfd.	(h&n)5.85	(n)7.50
133-5 Fully rfd.	(h&n)6.15	(n)8.00
135-7 Fully rfd.	(h&n)6.40	(n)8.50
	New Orleans	
	Domestic	Export
124-6 Y.C. scale	(o)	(p)6.25
122-4 W.C. scale	(o)	(o)
124-6 W.C. scale	(o)	(n)6.25
123-5 Fully rfd.	(o)	(o)
125-7 Fully rfd.	(o)	(n)7.00
128-30 Fully rfd.	(o)	(n)7.25
130-2 Fully rfd.	(o)	(n)7.50
133-5 Fully rfd.	(o)	(n)8.00

Gulf Coast Bulk

(FOB ship at Gulf for domestic and export; min. 20,000 bbls.)

Prices quoted by GCRA refiners follow:

	Nov. 6
GCRA Motor Fuel	
65 octane (CFR) unleaded	6.25
68 octane (CFR) unleaded	(p) 6.25 –6.50
70 octane (CFR) unleaded	(n)6.25
72-74 octane (CFR) unleaded	(o)
72-74 octane (CFR) leaded	6.25 – 6.375
GCRA Kerosine & Gas Oils	
Kerosine	(p) 4.50 –4.75
43 or below diesel index gas oil	(n)4.00
43-47 diesel index gas oil	(p) 4.00 –4.125
48-52 diesel index gas oil	(p)4.25
53-57 diesel index gas oil	(p) 4.375–4.50
58 & above	(p) 4.50 –4.75

Prices quoted by refiners for other products follow:

MOTOR GASOLINE

Nov. 6

	60-62 Gravity, 400 e.p.	61-63 Gravity, 390 e.p.	64-66 Gravity, 375 e.p.
60 oct.	5.75–6.00	(n)6.125	(n)6.25
65 oct.	6.00 –6.50	(n)6.50	(n)6.625
68 oct.	6.25 –6.75	(n)6.75	(n)6.875
72-74 oct.	6.00 –6.75	(n)6.75	(n)6.875

KEROSINE

	Nov. 6	Oct. 30
41-43 grav. w.w.	4.25 – 4.875	4.25 – 4.875

GAS OILS

Gas Oil (i):		
Below 43 diesel index	(n)4.00	(n)4.00
43-47 diesel index	(n)4.125	(n)4.125
48-52 diesel index	4.25 – 4.50	4.25 – 4.50
53-57 diesel index	(p) 4.375–4.75	(p) 4.375–4.75
58 & above	(n)4.50	(n)4.50

LIGHT FUEL OILS

No. 2	4.00 – 4.125	4.00 – 4.125

DIESEL and BUNKER OILS

(c) Diesel Oil	$1.70	$1.70 –$1.75
(c) Grade C bunker oil	$0.90 –$1.00	$0.90 –$1.00
Grade C bunker oil, cargoes	$0.95 –$1.00	$0.90 –$1.00

MID-CONTINENT LUBES

(Cents per gal. at Gulf; in bbls., FAS.; in bulk, FOB terminals)

	Nov. 6	
	Barrels	Bulk
190 vis. D. 210 brt. stock	(n)32.50	(n)27.80
200 vis. E 200 brt. stock	(n)31.50	(n)26.80
150 vis. D 210 brt. stock 0-10 p.p.	(p) 29.50–31.00	(p) 24.80–26.00
15-25 p.p.	(p) 28.50–30.00	(p) 23.80–25.00
150 vis. E 210 brt. stock	(n)28.50	(n)23.80
100 vis. D 210 brt. stock 0-10 p.p.	(n)28.50	(n)23.80
15-25 p.p.	(n)27.50	(n)22.80
200 vis. No. 3 col. neutral:		
0-10 p.p.	(n)20.00	(n&s)15.30
15-25 p.p.	(n)19.50	(n&s)14.80
180 vis. No. 3 col. neutral:		
0-10 p.p.	(n)19.50	(n&s)14.80
15-25 p.p.	(n)19.00	(n&s)14.30

SOUTH TEXAS LUBES

(Vis. at 100° cold test 0, bulk export shipment, FOB terminals.)

	Nov. 6	Oct. 30
Unfiltered Pale Oils:		
Vis. Color		
100 No. 3	5.75 – 6.00	5.75 – 6.00
200 No. 3	7.50 – 8.00	7.50 – 8.00
300 No. 3	8.00 – 8.50	8.00 – 8.50
500 No. 3½	9.00 – 9.50	9.00 – 9.50
750 No. 4	9.50 –10.00	9.50 –10.00
1200 No. 4	9.875–12.00	9.875–12.00
2000 No. 4	10.00	10.00
Red Oils:		
Vis. Color		
100 No. 5-6	5.75 – 6.00	5.75 – 6.00
200 No. 5-6	7.50 – 8.00	7.50 – 8.00
300 No. 5-6	8.00 – 8.50	8.00 – 8.50
500 No. 5-6	9.00 – 9.50	9.00 – 9.50
750 No. 5-6	9.50 –10.00	9.50 –10.00
1200 No. 5-6	9.875–12.00	9.875–12.00
2000 No. 5-6	10.00	10.00

Note: Red oil prices cover oils with green cast; prices for blue cast red oils are slightly lower in some cases.

Tanker Rates

(Approximate freight rates. To Continental ports, shillings per ton of 2240 lbs., British sterling; to U. S. ports cents per bbl.)

Rates Effective Nov. 6, 1939

	Crude & or Fuel		Refined Oil & / or Spirits	
	Last Paid	Owners Ask	Last Paid	Owners Ask
Gulf-U.K. (Cont.(k)	(q)	(q)	(q)	(q)
Aruba-U.K. (Cont.	(q)	(q)	(q)	(q)
Gulf-N. Atlantic (l) (not E. of N.Y.): Hvy. Crude & fuel, (10 to 19.9 gravity)	30c	33 to 35c	.....	.....
Light Crude, (30 Grav. or Lighter)	27c	30 to 32c	.....	.....
Gasoline	.....	.....	31c	31-32c
Kerosine	.....	.....	33c	33-34c
Light Fuel	.....	.....	35c	35-36c

(a) In barge lots. (c) Ships' bunkers. Lighterage, additional at some points, not included. (d) 150 fire point. (e) For San Francisco cargo prices, add 5c per bbl. to cargo prices shown above. (f) Pacific Specification 200. (g) Pacific Specification 400. (h) Shipment in bags or in bulk. (i) Less than ½ of 1% sulfur. (j) Second-hand barrels. (k) Continental ports in range between Bordeaux and Hamburg, both inclusive. (l) Venezuela loading, same rate: Tampico, 2c to 3c per bbl. additional. (m) One supplier quoting. (n) One refiner quoting. (o) No quotations reported. (p) Two refiners quoting. (q) No rates reported. (r) Two suppliers quoting. (s) Correct prices for Oct. 16 were: In Bulk, 200 Vis., 0-10 p.p., 14.30c; 15-25 p.p., 13.80c. 180 Vis., 0-10 p.p., 13.80c; 15-25 p.p., 13.30c. These prices supercede those published in Oct. 18 issue, for Oct. 16, page 44.

CRUDE OIL MARKETS

Prices in $ per bbl. of 42 U. S. gals. at the well. A. P. I. gravity. Prices are effective as of 7 a. m. of dates as given

EASTERN FIELDS

Posted by Joseph Seep Purchasing Agency
(Effective Nov. 1, 1939, except Corning Nov. 4, 1939)

Penna. Grade Oil in Southwest Penna. Pipe Lines $2.05
Penna. Grade Oil in Eureka Pipe Lines (West Virginia) $1.99
Corning Oil in Buckeye Pipe Lines (Ohio) $1.12

Posted by Other Companies

Tide Water Associated Oil Co.
Bradford-Allegany district (Penna. and N. Y.) (Effective Nov. 1, 1939) $2.40
*The Pennzoil Co.: (Effective Nov. 1, 1939)
Penna. Grade Oil in National Transit Lines *$2.33
*The Pennzoil Co. posts $2.33 in Cochran, Franklin, Hamilton and Doolittle, Pa. fields, prices in other lower districts range down to $2.28 per bbl. at well.

MICHIGAN

Posted by Pure Oil Co.
(Effective Oct. 9, 1939)

Midland, Midland County $1.02
Sherman $0.97
Clare-Freeman $0.97

Posted by Simrall Corp.
(Effective Oct. 9, 1939)

Crystal, Greendale, Porter, Vernon and Wise $1.02
Beaverton, Buckeye, Bentley, Edenville $1.00
Freeman and Redding $0.97
Arenac $0.82
(Effective Nov. 1, 1939)
West Branch $0.85

Posted by Sohio Corp. (Michigan Division)
(Effective Oct. 9, 1939)

Allegan and Kent Counties $1.03
Van Buren County $0.98

Posted by Bay Pipe Line Corp.
(Effective Oct. 9, 1939)

Bentley and Buckeye $1.00
Saginaw and Wise $1.02
Clare $0.76

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.
(Effective June 8, 1939)

Illinois and Western Indiana $0.95
Illinois Basin $1.05

Posted by Sohio Corp.

Illinois Basin:
(Effective Oct. 21, 1939)
Salem (Lake Centralia) $1.05
(Effective June 8, 1939)
Balance of Illinois Basin $1.05
(Effective Oct. 10, 1939)
Griffin (Ind.) pool, sand wells $0.95
Griffin (Ind.) pool, McCloskey lime $0.85

Posted by Carter Oil Co.
(Effective June 10, 1939)

Louden, Fayette County, Ill. $1.05

Posted by Ashland Oil & Transportation Co.
(Effective June 9, 1939)

Somerset Oil in Ashland Lines, Kentucky:
Big Sandy River $1.02
Kentucky River $1.10

Posted by Stoll Oil Refining Co.
(Effective June 10, 1939)

Stoll Pipe Line Oil (Ky.) $0.90

Posted by Fordsville Gathering Line, Inc.
Western Kentucky
(Effective June 9, 1939)

Birk City Area $0.90
Owensboro Area $1.00
Corydon Area (Henderson) $0.90

CANADIAN FIELDS

Posted by Imperial Oil Limited.
Western Ontario
(Effective Oct. 25, 1938)

Petrolia ..... $1.90 Oil Springs $1.97

Alberta Turner Valley
(Prices f.o.b. field tankage)
(Effective Jan. 5, 1938)

Crude Oil			
40-40.9°	$1.14	53-53.9	$1.40
41-41.9	1.16	54-54.9	1.42
42-42.9	1.18	55-55.9	1.44
43-43.9	1.20	56-56.9	1.46
44-44.9	1.22	57-57.9	1.48
45-45.9	1.24	58-58.9	1.50
46-46.9	1.26	59-59.9	1.52
47-47.9	1.28	60-60.9	1.54
48-48.9	1.30	61-61.9	1.56
49-49.9	1.32	62-62.9	1.58
50-50.9	1.34	63-63.9	1.60
51-51.9	1.36	64-64.9	1.62
52-52.9	1.38		

Crude Naphtha, 65 grav. & above $2.14

Absorption Gasoline	
90% Rec., 20 lb. Reid v.p.	$1.94
90% Rec., 17 lb. Reid v.p.	$2.08

MID-CONTINENT
Oklahoma-Kansas
*(For effective dates, see footnote)

	S. O. Indiana	Carter Magnolia Shell	Continental Texas Co.	Sinclair Prairie
Below 21°	$0.70	$0.60	....	....
21-21.9	.72	.63	....	....
22-22.9	.74	.66	....	....
23-23.9	.76	.69	....	....
24-24.9	.78	.72	....	....
25-25.9	.80	.75	....	$0.58
26-26.9	.82	.78	....	.63
27-27.9	.84	.81	....	.68
28-28.9	.86	.84	$0.86	.73
29-29.9	.88	.87	.88	.78
30-30.9	.90	.90	.90	.82
31-31.9	.92	.92	.92	.86
32-32.9	.94	.94	.94	.90
33-33.9	.96	.96	.96	.96
34-34.9	.98	.98	.98	.98
35-35.9	1.00	1.00	1.00	1.00
36-36.9	1.02	1.02	1.02	1.02
37-37.9	1.04	1.04	1.04	1.04
38-38.9	1.06	1.06	1.06	1.06
39-39.9	1.08	1.08	1.08	1.08
40 & above	1.10	1.10	1.10	1.10

*Effective in 1938 by Carter Oil, Oct. 13, posting in Okla. only; Continental Oil Oct. 11, with lowest grade below 29; Magnolia, Oct. 12, posting in Okla. only; Shell, Oct. 22; S. O. Indiana, Oct. 17; The Texas Co., Oct. 12. Aug. 31, 1939, by Sinclair Prairie.

North-North Central and Central Texas
*(For effective dates, see footnote)

	Stanolind	Sinclair Texas Co. Continental Magnolia
Below 21°	$0.60	....
21-21.9	.62	....
22-22.9	.64	....
23-23.9	.66	....
24-24.9	.68	$0.79
25-25.9	.70	for
26-26.9	.72	oil
27-27.9	.74	below
28-28.9	.76	29°.
29-29.9	.78	.81
30-30.9	.80	.83
31-31.9	.82	.85
32-32.9	.84	.87
33-33.9	.86	.89
34-34.9	.88	.91
35-35.9	.90	.93
36-36.9	.92	.95
37-37.9	.94	.97
38-38.9	.96	.99
39-39.9	.98	1.01
40 & above	1.00	1.03

*Effective Oct. 11, 1938 by Continental, in North Tex.; Oct. 12, 1938, by Texas Co. in North & North Central Texas. Texas Co.'s lowest grade is 28-28.9, at $0.79; by Magnolia, Dec. 3, 1938, in N. and N. Central Texas; Oct. 5, 1939 by Sinclair Prairie in Mexia and N. Cent. Texas.

Jefferson County, Texas—Beaumont
(Posted by Magnolia Petroleum Co., Effective Oct. 2, 1939, and by Stanolind Oil & Gas Co., for West Beaumont, Effective Oct. 2, 1939)

Below 20°	$0.86	30-30.9	$1.08
20-20.9	.88	31-31.9	1.10
21-21.9	.90	32-32.9	1.12
22-22.9	.92	33-33.9	1.14
23-23.9	.94	34-34.9	1.16
24-24.9	.96	35-35.9	1.18
25-25.9	.98	36-36.9	1.20
26-26.9	1.00	37-37.9	1.22
27-27.9	1.02	38-38.9	1.24
28-28.9	1.04	39-39.9	1.26
29-29.9	1.06	40 & above	1.28

TEXAS FIELDS

Posted by Humble Oil & Refining Co.
**West Central Texas*
(Effective Aug. 11, 1939)

24-24.9	$0.71	33-33.9	$0.89
25-25.9	.73	34-34.9	.91
26-26.9	.75	35-35.9	.93
27-27.9	.77	36-36.9	.95
28-28.9	.79	37-37.9	.97
29-29.9	.81	38-38.9	.99
30-30.9	.83	39-39.9	1.01
31-31.9	.85	40 & above	1.03
32-32.9	.87		

*Includes Brown, Callahan, Coleman, Comanche, Eastland, Fisher, Haskell, Jones, Shackelford, Stephens, Throckmorton and Young Counties.

Effective Aug. 29, 1939, Shell posted in Fisher county, Tex., prices 3c lower than Humble's West Central Texas prices; Shell's schedule begins with below 25, at $0.68 and ends with 40 & above, at $1.

Note: Effective Oct. 1, 1937, Humble prices are based on 100% tank tables at 60F.

**East Central Texas*
(Effective Aug. 11, 1939)

23-23.9	$0.78	32-32.9	$0.96
24-24.9	.80	33-33.9	.98
25-25.9	.82	34-34.9	1.00
26-26.9	.84	35-35.9	1.02
27-27.9	.86	36-36.9	1.04
28-28.9	.88	37-37.9	1.06
29-29.9	.90	38-38.9	1.08
30-30.9	.92	39-39.9	1.10
31-31.9	.94	40 and above	1.12

Posted by Pan American Pipe Line Co.
(Effective Oct. 2, 1939)

Cayuga, Anderson county $0.78
*Including Anderson, Cherokee, Limestone, Navarro counties.

PANHANDLE TEXAS

	Humble (Aug. 11, 1939)		Texas Co. (Oct. 2, 1939)	
	Gray County	Carson-Hutchinson	Sweet	Sour
28-28.9	$0.72	$0.67	....	....
29-29.9	.74	.69	....	....
30-30.9	.76	.71	....	....
31-31.9	.78	.73	....	....
32-32.9	.80	.75	....	....
33-33.9	.82	.77	....	....
34-34.9	.84	.79	$0.84	$0.79
35-35.9	.86	.81	.86	.81
36-36.9	.88	.83	.88	.83
37-37.9	.90	.85	.90	.85
38-38.9	.92	.87	.92	.87
39-39.9	.94	.89	.94	.89
40 & above.	.96	.91	.96	.91

Effective Aug. 31, 1939, Sinclair Prairie met Humble in Panhandle Texas. Dec. 3, 1938, Magnolia posted same schedule as Humble.

***EAST TEXAS**

By Humble, Shell, Sinclair-Prairie, Stanolind, Gulf, Magnolia, Texas Co., Tide Water-Associated $1.10
*Effective dates: Aug. 11, 1939, by Humble and Tide Water-Associated; Aug. 29, 1939, by Stanolind; Oct. 2, 1939 by Sinclair Prairie; Oct. 5, 1939 by Shell; Oct. 12, 1938, by Magnolia, Texas Co.; Oct. 13, 1938, by Gulf.
*Includes Cherokee, Gregg, Rusk, Smith and Upshur counties.

Posted by Shell Oil Co., Inc.
(Effective Oct. 5, 1939)

Polk County, Tex. (Livingston and Schwab-Wilcox areas) $1.10

NORTHEAST TEXAS
(Posted by Humble, Oct. 2, 1939)

Talco $0.65

Posted by Magnolia, Oct. 12, 1938)

Cass County and Panola County, Tex.:
Magnolia posts below 25° at $0.73, plus 2c differential for each degree, to top grade of 40 & above, at $1.05.

(Posted by The Texas Co., Oct. 12, 1938)

Cass County $1.05

WEST TEXAS and NEW MEXICO

(a) (For effective dates, see footnote)

	Humble	Stanolind	Shell	Texas Co. Sinclair (c)
Below 20°	$0.53	....	$0.53	....
20-20.9	.55	....	.55	....
21-21.9	.57	....	.57	....
22-22.9	.59	$0.67	.59	....
23-23.9	.61	for	.61	....
24-24.9	.63	oil	.63	....
25-25.9	.65	Below	.65	$0.65
26-26.9	.67	26°.	.67	.67
27-27.9	.69	.69	.69	.69
28-28.9	.71	.71	.71	.71
29-29.9	.73	.73	.73	.73
30-30.9	.75	.75	.75	.75
31-31.9	.77	.77	.77	.77
32-32.9	.79	.79	.79	.79
33-33.9	.81	.81	.81	.81
34-34.9	.83	.83	.83	.83
35-35.9	.85	.85	.85	.85
36-36.9	.87	.87	.87	.87
37-37.9	.89	.89	for	for
38-38.9	.91	.91	oil	oil
39-39.9	.93	.93	36° &	36° &
40 & above.	.95	.95	above.	above.

Posted by Magnolia Petroleum Co.
(Effective Oct. 12, 1938 in West Texas; Oct. 15, 1939 in Lea County, N. Mex.)

	West Texas	N. Mex.		West Texas	N. Mex.
Below 25.	$0.63	$0.63	33-33.9	$0.81	$0.81
25-25.9	.65	.65	34-34.9	.83	.83
26-26.9	.67	.67	35-35.9	.85	.85
27-27.9	.69	.69	36-36.9	.87	.87
28-28.9	.71	.71	37-37.9	.89	for
29-29.9	.73	.73	38-38.9	.91	oil
30-30.9	.75	.75	39-39.9	.93	36 &
31-31.9	.77	.77	40 & over	.95	above
32-32.9	.79	.79			

Note: Magnolia's West Texas postings are in Crane, Glasscock, Howard, Mitchell, Upton and Winkler counties.

Pecos County, West Texas
(Posted by Humble Aug. 11, 1939 and Shell, Aug. 29 '39)

Pecos $0.78
Yates Shallow Pool (Shell only) ..... .65

Posted by Sinclair Prairie Oil Marketing Co.
(Effective Aug. 31, 1939)

Eddy county, N. Mex. $0.77

(a) Effective Aug. 11, 1939 by Humble; Shell Oil, Aug. 29, 1939; by The Texas Co., Oct. 12, 1938; Stanolind, Aug. 29, 1939; Sinclair Prairie, Aug. 31, 1939.

(c) Texas Co. posts $0.65 for below 26; Sinclair Prairie, $0.63 for below 25.

Note: Humble's postings are in these counties: Andrews, Crane, Crockett, Ector, Gaines, Glasscock, Howard, Reagan, Upton, Winkler and Yoakum, West Texas; and Lea county, N. Mex.; Shell, in Crane, Ector, Glasscock, Howard, Upton, Winkler, Yoakum, Lea; Stanolind in Hendrick and Henderson field, Winkler county; Texas Co. in Ward, Winkler and Lea.

Posted by Continental Oil Co.
(Effective Oct. 11, 1938)

Artesia, Jackson and Maljamar pools, New Mexico: gravity schedule beginning with below 29, at $0.61; 29-29.9, at $0.63; plus 2c differential for each gravity, up to 40 & above, at $0.85.

COLORADO

Posted by Continental Oil Co
(Effective Oct. 11, 1938)
Ft. Collins and Wellington

Below 29	$0.81	35-35.9	$0.95
29-29.9	.83	36-36.9	.97
30-30.9	.85	37-37.9	.99
31-31.9	.87	38-38.9	1.01
32-32.9	.89	39-39.9	1.03
33-33.9	.91	40 & above	1.05
34-34.9	.93		

Canon City and Florence, Col $0.90

SOUTH AND SOUTHWEST TEXAS

All Shown Below Posted by Humble Oil & Refining Co.
(Effective Aug. 11, 1939)

Carroll, Clark, Darst Creek, Hilbig, Salt Flat and Zoboroski crudes $0.96
Van crude $0.92
Conroe $1.27
(Effective Oct. 2, 1939)
Flour Bluff and Jim Wells County $1.23
(Effective Sept. 14, 1939)
Hardin, Liberty county $1.10

Oct. 12, '38, Magnolia posted $0.96 in Darst Creek; $0.87 in Luling; $0.99 in Lytton Springs; $1.14 for Cleveland, and $1.02 in Hardin, both in Liberty county, Tex.

Oct. 12, '38, The Texas Co. posted $0.96 in Darst Creek.

(Continued on next page)

CRUDE OIL MARKETS

(Continued from preceding page)

***Anahuac-Dickinson**
(Effective Oct. 2, 1939)

Below 20°	$0.81	30-30.9	$1.03
20-20.9	.83	31-31.9	1.05
21-21.9	.85	32-32.9	1.07
22-22.9	.87	33-33.9	1.09
23-23.9	.89	34-34.9	1.11
24-24.9	.91	35-35.9	1.13
25-25.9	.93	36-36.9	1.15
26-26.9	.95	37-37.9	1.17
27-27.9	.97	38-38.9	1.19
28-28.9	.99	39-39.9	1.21
29-29.9	1.01	40 & above	1.23

*Anahuac-Dickinson includes Cedar Point, Fairbanks, Gillock, Hull, Pierce Junction and Raccoon Bend (shallow sand) and Turtle Bay.

Raccoon Bend (Deep sand crude) Tomball and Satsuma
(Effective Aug. 11, 1939)

22-22.9	$0.95	32-32.9	$1.15
23-23.9	.97	33-33.9	1.17
24-24.9	.99	34-34.9	1.19
25-25.9	1.01	35-35.9	1.21
26-26.9	1.03	36-36.9	1.23
27-27.9	1.05	37-37.9	1.25
28-28.9	1.07	38-38.9	1.27
29-29.9	1.09	39-39.9	1.29
30-30.9	1.11	40 & above	1.31
31-31.9	1.13		

Dec. 3, 1938, Magnolia posted above price and gravity schedule in Tomball. Effective Aug. 29, 1939, Stanolind met Humble in Tomball, except that Stanolind's schedule begins with below 29 at $1.07.

LOUISIANA-ARKANSAS
Posted by Standard Oil Co. of Louisiana
(†) (For effective dates, see footnote)

Gravity	*N. La.-Ark. Sweet	Bunkie-Eola, La.	*South La. Sour	*Ark. Sour	Baton Rouge-University
Below 20°	....	....	....	....	$0.79
20-20.9	$0.73	$0.83	‡$0.74	$0.63	.82
21-21.9	for	for	.77	for	.85
22-22.9	oil	oil	.80	oil	.88
23-23.9	Below	Below	.83	Below	.91
24-24.9	25°.	25°.	.86	25°.	.94
25-25.9	.75	.85	.89	.65	.97
26-26.9	.77	.87	.92	.67	1.00
27-27.9	.79	.89	.94	.69	1.02
28-28.9	.81	.91	.96	.71	1.04
29-29.9	.83	.93	.98	.73	1.06
30-30.9	.85	.95	1.00	.75	1.08
31-31.9	.87	.97	1.02	.77	1.10
32-32.9	.89	.99	1.04	.79	1.12
33-33.9	.91	1.01	1.06	.81	1.14
34-34.9	.93	1.03	1.08	.83	1.16
35-35.9	.95	1.05	1.10	.85	1.18
36-36.9	.97	1.07	1.12	.87	1.20
37-37.9	.99	1.09	1.14	.89	1.22
38-38.9	1.01	1.11	1.16	.91	1.24
39-39.9	1.03	1.13	1.18	.93	1.26
40 & above	1.05	1.15	1.20	.95	1.28

(Effective Aug. 30, 1939)

Smackover, Ark. $0.73
Cotton Valley Distillate $1.20

*N. La.-Ark. Sweet includes Caddo, Cotton Valley, Cross Lake, De Soto, Haynesville, Homer, Rodessa, Sabine and Sligo, La. crudes, and Miller county, Ark. S. La. Sour includes Choctaw, Darrow, N. Crowley, Roanoke and St. Martinsville. S. Ark. Sour includes Buchner, Magnolia and Village pools.

†N. La.-Ark. Sweet crude and S. La. Sour effective Aug. 30, 1939, except Cross Lake, La., Sept. 7, Baton Rouge-Univ., Sept. 11, and Bunkie and Eola, Oct. 23, 1939; and Ark. Sour, Sept. 13, 1939.

‡For Below 21°.

Effective Sept. 8, 1939, Gulf Refg. Co. met S. O. La's. N. La.-Ark. Sweet prices in Bull Bayou, Caddo, Crichton, De Soto, Haynesville, Homer, and El Dorado.

Posted by Arkansas Fuel Oil Corp.
(Effective Jan. 28, 1937)

Urania, La. $1.02

Posted by Continental Oil Co.
(Effective Oct. 11, 1938)

Tepetate and Ville Platte, La. $1.03

(Effective Jan. 1, 1939)
Abbeville, La.

Below 36	$0.92	38-38.9	$0.98
36-36.9	.94	39-39.9	1.00
37-37.9	.96	40 & above	1.02

Posted by Caddo Crude Oil Purchasing Corp.
(Effective Aug. 14, 1939)

Allison area, Shreveport field $0.95

Lisbon, N. La.
(Effective Sept. 14, 1939)

27-27.9	$0.66	32-32.9	$0.76
28-28.9	.68	33-33.9	.78
29-29.9	.70	34-34.9	.80
30-30.9	.72	35 & above	.82
31-31.9	.74		

Lisbon prices met by Gulf, Sept. 14.

Note: S. O. Louisiana prices in all La.-Ark. fields, effective Oct. 5, 1938, are on 100% tank table basis.

GULF COASTAL FIELDS
(a) (For effective dates, see footnote)

Gravity	Humble Sinclair Stanolind	Refugio Crude (Humble, Continental)	Texas Co.	Shell
Below 20	$0.86	$0.91	$0.86	(b)$0.79
20-20.9	.88	.93	.88	.81
21-21.9	.90	.95	.90	.83
22-22.9	.92	.97	.92	.86
23-23.9	.94	.99	.94	.89
24-24.9	.96	1.01	.96	.92
25-25.9	.98	1.03	.98	.95
26-26.9	1.00	1.05	1.00	.98
27-27.9	1.02	1.07	1.02	1.00
28-28.9	1.04	1.09	1.04	1.02
29-29.9	1.06	1.11	1.06	1.04
30-30.9	1.08	1.13	1.08	1.06
31-31.9	1.10	1.15	1.10	1.08
32-32.9	1.12	1.17	1.12	1.10
33-33.9	1.14	1.19	1.14	1.12
34-34.9	1.16	1.21	1.16	1.14

(Continued in next column)

35-35.9	1.18	1.23	for	for
36-36.9	1.20	1.25	oil	oil
37-37.9	1.22	1.27	34° &	34° &
38-38.9	1.24	1.29	above.	above.
39-39.9	1.26	1.31		
40 & above.	1.28	1.33		

(a) Effective Oct. 2, 1939 by Continental, Humble and Texas Co.; Oct. 3, 1939 by Sinclair and Stanolind; Aug. 29, 1939 by Shell. Stanolind's lowest grade is below 21, at $0.88. Refugio, effective Oct. 2, '39 by Humble.

(b) Shell posts these prices in Iowa district, Black Bayou and White Castle, La.; prices in Iowa district have 2 lower grades: below 18, at $0.75, 18-18.9, $0.77; and 19-19.9, is $0.79.

Note: Humble's Gulf Coast prices apply in these Texas fields: Amelia, Clear Lake, Goose Creek, Mirando which includes Duval, Jim Hogg, Webb and Zapata counties and Heyser and Placedo fields; Mykawa, Sugarland, Thompsons and Webster.

Humble's prices in Refugio include crudes purchased in Saxet, East White Point, Greta, O'Connor-McFadden, Taft, Plymouth and Tom O'Connor fields.

Stanolind's prices apply in Clinton, Hastings, High Island, South Houston and Spindletop. Magnolia posts Mirando, effective Oct. 2, same prices as Humble. Texas Co.'s prices are in Texas and La., Gulf Coast; its prices on Refugio are same as Humble's up to 28 gravity; 28 & above, $1.09; on Duval-Mirando, same as Humble's up to 28; 28 & above, $1.04; it posts Golden Meadow, La., 24-30 grav., $0.90, plus 2c differential, to 40 & above. $1.10,

Posted by Shell Oil Co., Inc.
(Effective Aug. 29, 1939)

Gibson field, Terreborne Parish, La. $1.04

ROCKY MOUNTAIN FIELDS
Posted by Stanolind Oil & Gas Co.
(Effective Oct. 11, 1938)

Salt Creek, (except Tensleep crude), Midway and Dutton Creek, Wyo., same schedule as Stanolind posts in Oklahoma-Kansas, ranging from $0.86 to $1.10, which see under Mid-Continent crude on previous page.

Tensleep, Salt Creek field	$0.646
Iles, heavy	0.92
Elk Basin, light	0.90
Grass Creek, light	0.90
Frannie light	0.55
Grass Creek, heavy	0.40
Hamilton Dome, Wyo.	0.35
Frannie heavy	0.42

Posted by Ohio Oil Co.
(Effective Oct. 11, 1938)

Elk Basin, Wyo.	$0.90
Grass Creek, light	0.90
Rock Creek	1.00
Lance Creek	0.77
Dry Creek, Mont.	0.92

(Effective May 1, 1938)

Grass Creek, heavy	$0.50

(Effective Nov. 16, 1937)

Sunburst, Mont.	$0.90

Posted by Continental Oil Co.
(Effective Oct. 11, 1938)

Cat Creek, Mont.	$1.10
Big Muddy, Wyo.	0.98
Lance Creek, Wyo.	0.77

CALIFORNIA, *Posted by Standard Oil of California*

All gravities above those quoted take highest price offered in the field. Prices effective Feb. 26, 1936, except Huntington Beach, Playa del Rey, Santa Fe Springs, Kern Front, Signal Hill (Long Beach) effective March 7, 1936; Elk Hills effective June 22, 1936; Lakeview Area, Aug. 19, 1936; El Segundo and Wilmington, Oct. 15, 1937; Greeley-Canal, July 9, 1938; Montebello, Aug. 11, 1939.

Gravity	Signal Hill (Long Beach) El Segundo †Wilmington	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda Brea Canon	Athens Rosecrans	Dominguez	Torrance	Richfield	Whittier East Coyote (La Habra)	Montebello	West Coyote Hills	Santa Fe Springs	‡Newhall and others	Mountain View	Elk Hills	Buena Vista Hills Midway-Sunset Lakeview Area	Greeley-Canal (Kern County)	Lost Hills	Coalinga	Wheeler Ridge	Santa Maria Val. (Union Oil, Sept. 1 '39)
13-13.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
14-14.9	$0.80	$0.79	$0.74	$0.78	$0.79	$0.80	$0.76	....	....	$0.80	$0.76	$0.76	$0.77	$0.78	....	$0.70	....	$0.70	$0.70	....	$0.70	$0.70	....	$0.42
15-15.9	.80	.79	.74	.78	.79	.80	.76	....	....	.80	.76	.76	.77	.78	....	.70	....	.70	.70	....	.70	.70	....	.44
16-16.9	.80	.79	.74	.78	.79	.80	.76	....	....	.80	.76	.76	.77	.78	....	.70	....	.70	.70	....	.70	.70	....	.45
17-17.9	.80	.79	.74	.78	.81	.80	.76	....	....	.80	.76	.76	.77	.78	....	.70	....	.70	.70	....	.70	.70	....	.46
18-18.9	.80	.79	.74	.78	.84	.80	.78	....	....	.82	.76	.76	.77	.78	....	.70	....	.70	.70	....	.70	.70	....	....
19-19.9	.82	.79	.74	.82	.87	.84	.81	....	....	.85	.76	.78	.77	.78	....	.70	.70	.74	.74	....	.74	.71	.70	....
20-20.9	.85	.79	.74	.85	.90	.88	.84	....	....	.88	.78	.82	.77	.80	....	....	.70	.78	.78	....	.78	.72	.70	....
21-21.9	.88	.79	.74	.89	.93	.93	.88	....	....	.91	.80	.85	.77	.84	.78	....	.73	.82	.82	....	.82	.74	.70	....
22-22.9	.92	.82	.74	.92	.96	.98	.92	....	....	.93	.84	.89	.79	.88	.78	....	.77	.87	.87	....	.86	.78	.72	....
23-23.9	.95	.86	.77	.96	.99	1.02	.96	.84	.79	.96	.88	.93	.82	.92	.78	....	.80	.92	.92	....	.90	.82	.76	....
24-24.9	.99	.91	.80	1.00	1.02	1.06	.99	.88	.81	.99	.91	.96	.85	.96	.82	....	.84	.97	.97	....	.94	.86	.79	....
25-25.9	1.03	.95	.82	1.03	1.05	1.11	1.03	.93	.83	1.02	.95	....	.89	.99	.86	....	.88	1.01	1.01	....	.98	.90	.83	....
26-26.9	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	1.05	.98	....	.93	1.03	.90	....	.91	1.06	1.06	....	1.02	....	....	....
27-27.9	1.10	1.05	.88	1.11	1.12	....	1.10	1.03	.88	....	1.02	....	.97	1.06	.95	....	.95	1.10	1.10	$0.91	1.06	....	....	....
28-28.9	1.14	1.10	.90	1.14	1.15	....	1.14	1.07	.90	....	1.06	....	1.01	1.10	.99	....	.99	1.15	1.15	.94	1.10	....	....	....
29-29.9	1.17	1.15	.93	1.18	1.18	....	1.17	1.12	.93	....	1.09	....	1.06	1.14	1.03	....	1.02	1.20	1.20	.98	1.14	....	....	....
30-30.9	1.21	1.19	.95	1.22	1.21	....	1.21	1.17	.95	....	....	....	1.10	1.17	1.08	....	1.06	1.25	1.25	1.02	1.18	....	....	....
31-31.9					1.24		1.24	1.22	.97	....	....	....	1.14	1.21	1.12	....	1.09	1.29	1.29	1.06				....
32-32.9		*Elwood Terrace		....	1.27		1.27	1.27	1.00	....	....	....	1.18	1.25	1.16	....	1.13	1.34	1.34	1.09		Kettleman Hills		....
33-33.9	....	1.28	....	....	....		....	1.32	....	....	....	....	1.22	1.28	1.20	....	1.17	1.38	1.38	1.13	....	1.19	....	....
34-34.9	....	1.32	....	....	....		....	1.37	....	....	....	....	1.26	1.32	1.25	....	1.20	....	....	1.17	....	1.23	....	....
35-35.9	....	1.35	....	....	....		....	1.42	....	....	....	....	1.30	....	1.29	....	....	....	....	1.20	....	1.27	....	....
36-36.9	....	1.39	....	....	....		....	1.46	....	....	....	....	1.34	....	1.33	....	....	....	....	1.24	....	1.31	....	....
37-37.9	....	1.43	....	....	....		....	1.51	....	....	....	....	1.38	....	1.37	....	....	....	....	1.28	....	1.35	....	....
38-38.9	....	....	....	....	....		....	1.56	....	....	....	....	1.42	....	1.42	....	....	....	....	1.31	....	1.39	....	....
39-39.9	....	....	....	....	....		....	1.61	....	....	....	....	1.47	....	....	....	....	....	....	1.35	....	1.43	....	....
40-40.9	....	....	....	....	....		....	1.66	....	....	....	....	1.51	....	....	....	....	....	....	1.39	....	....	....	....
41-41.9	....	....	....	....	....		....	....	....	....	....	....	1.55	....	....	....	....	....	....	1.43	....	....	....	....
42-42.9	....	....	....	....	....		....	....	....	....	....	....	1.59	....	....	....	....	....	....	1.46	....	....	....	....
43-43.9	....	....	....	....	....		....	....	....	....	....	....	1.63	....	....	....	....	....	....	1.50	....	....	....	....
44-44.9	....	....	....	....	....		....	....	....	....	....	....	1.67	....	....	....	....	....	....	1.54	....	....	....	....
45-45.9	....	....	....	....	....		....	....	....	....	....	....	1.71	....	....	....	....	....	....	1.57	....	....	....	....
46-46.9	....	....	....	....	....		....	....	....	....	....	....	1.75	....	....	....	....	....	....	1.61	....	....	....	....
47-47.9	....	....	....	....	....		....	....	....	....	....	....	....	....	....	....	....	....	....	1.65	....	....	....	....
48-48.9	....	....	....	....	....		....	....	....	....	....	....	....	....	....	....	....	....	....	1.68	....	....	....	....

F.O.B. Standard Pipe Line

*F. o. b. ship.
‡Also McKittrick, Kern River. Kern Front and Round Mountain $0.70 thru 19.9 gravity; no higher gravity quoted.
†Wilmington prices differ on gravities below 18.9. Prices are: 14-16.9, $0.75; 17-17.9, $0.77; and 18-18.9, $0.79; rest of schedule same as Signal Hill

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(*Continued from page* 74)

150 vis. neutral, 23 to 28 cents. Refiners said they were restricting lube sales to limited quantities to regular customers only.

Prices for gasoline, kerosine and fuel oil generally were reported unchanged.

Mid-Western

CHICAGO, Nov. 4.—Inclement weather in the middle west curtailed demand for gasoline, according to reports in Chicago the past week. Volume of open spot sales was approximately the same as in recent weeks, but the call for contract shipments was lighter, reports indicated. Open spot sales of 70-72 octane gasoline reported during the week totaled 16 cars at prices ranging from 4.75 to 5.25 cents.

Some tank car marketers said that offerings of low octane gasoline from refiners were scarce. This grade was being used largely for leading, they said. Group 3 quotations reported for 62 octane and below ranged from 4.25 to 4.75 cents.

Kerosine was quiet. Quotations reported for 41-43 water white ranged from 3.50 to 4 cents, Group 3, and 3.625 to 4.25 cents for 42-44.

Fuel Oil

NEW YORK, Nov. 4.—A steadily increasing demand for fuel oil held the attention of most suppliers along the Atlantic Seaboard the past week. One supplier said fuel oil was in the best position he had seen it since the fall of 1937. Another remarked, "The fuel oil market is one of the best markets I've seen in many moons." Colder weather and increased activity in industry generally were credited with the heavier demand.

Quotations for fuel oils generally were reported unchanged with the exception of No. 5 at Providence, for which one refiner said he was now asking $1.45. Other Providence suppliers quoted $1.40 for this grade.

TULSA, Nov. 4.—The cold snap the past week brought a "flock" of light fuel oil inquiries to Mid-Continent refiners, according to reports here. Supplies were reported closely held and one refiner said he "just couldn't take care of the increased inquiries." He said he had already been limiting sales to regular customers. Quotations generally were reported unchanged.

Heavy fuels were moving out in good volume against contracts, according to most reports. Inquiry from industrial buyers was heavy. No open spot sales were reported.

CLASSIFIED

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The entire plant is in fine condition, entirely enclosed by Cyclone iron fence, and offered for sale at a very moderate price.

Illustrated circular will be mailed upon request.

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Advertisements set in special type or with border—$4.00 per column inch.

Copy must reach us not later than Saturday preceding date of issue.

All advertisements carried on this page are payable in advance.

"STRICTLY PERSONAL"

The petroleum industry gained a golfer of national fame when **Art Doering** recently joined the sales staff of the Spencer Petroleum Co., Chicago. Among Mr. Doering's many golf achievements was winning the Chicago junior championship in 1933 and the Illinois junior championship in 1934. In 1938 he was medalist and won the Stanford University championship, and was a member of the Stanford golf team that won the national collegiate championship. Mr. Doering went as far as the semi-finals in the National Amateur championship last summer.

* * *

A unique opportunity for a double celebration for the Phillips Petroleum Co., Bartlesville, Okla., presents itself on Nov. 28 when **Frank Phillips,** chairman of the board, will be 66 years old. The celebration will tie in his age with the company's trade-name "Phillips '66' " for its motor gasolines and oil.

Advance details indicate that as far as possible, a general holiday through the organization will be in effect that day and those employes whose work permits are invited to come to Bartlesville.

In recognition of the event, an extra-size, special souvenir issue of the employe magazine, *Philnews*, will be published. It will contain the life story of Mr. Phillips and will be presented to every dealer, jobber, employe, sales representative and stockholder of the company and its subsidiaries.

The Jane Phillips sorority and Phillips Men's Club, employe social organizations, are planning and carrying out the details of the celebration.

* * *

J. Herbert Anderson, special representative of the Mexican government, is in charge of offices opened recently at 70 Pine Street, New York City, by Mexican Petroleum Distributors (Distribuidora De Petroleos Mexicanos). Sales of Mexican petroleum products will be handled by Mr. Anderson.

* * *

E. W. Allgower, assistant chief clerk of the Standard Oil Co. of Ohio since 1933, has been promoted to assistant treasurer. He has been with the company 22 years. Mr. Allgower started as a bellhop in his father's hotel at Richwood, O., where he often carried bags for Phil Winchester, a field representative for the Standard. He asked Mr. Winchester about a job and soon got one at the Lima bulk station. He later served in the sales department of the Toledo division, was chief clerk in the accounting offices at Dayton of the Columbus-Cincinnati divisions and assistant treasurer of Refiners, Inc., when it was acquired by Standard in 1931. In 1933 when the company's accounting offices were combined in Cleveland, Mr. Allgower was made assistant chief clerk.

* * *

Louisville (Ky.) Oil Men's Bowling League will sponsor its second "Bowling Ball" at the Casa Madrid Ballroom on Dec. 16, **R. F. Wilbert,** league secretary announces. The affair will be in form of a Christmas party. Last year it was attended by over 350 people.

* * *

W. H. O'Connor has been appointed director of purchases for Continental Oil Co., **Dan Moran,** president, announces. **Mr. O'Connor** has been the company's general purchasing agent for the past 20 years. **George W. Evans** was appointed general purchasing agent. Prior to assuming his new duties Mr. Evans was assistant general purchasing agent. He joined the old Marland company in 1922 and was transferred from the accounting to the purchasing department in 1923. He became assistant purchasing agent in 1924, retaining that position following the merger with Continental.

George W. Evans W. H. O'Connor

* * *

That advertising ditty to the tune of "Yes, We Have No Bananas", which went out on the air at 7:30 AM last week from Radio Station CKLW, "plugging" for a certain Detroit oil marketer, was written by **Jay J. Rosenthal,** former secretary of the Detroit Retail Gasoline Dealers Ass'n., who still keeps up with the doings in the oil business, despite his retirement to the sidelines two years ago.

* * *

Several prominent oil men were included in the party which toured the Illinois oil basin last week under the auspices of the St. Louis Chamber of Commerce. They were **Alexander Fraser,** president of the Shell Oil Co., **Robert W. May,** Standard Oil Co. of Indiana, **A. Bancroft Wells, E. G. Robinson, Arnold C. Dahl** and **Hiram Norcross** of Shell Oil Co., **Ralph Damp** of the Carter Oil Co., and **William C. Kneale** of The Texas Co. Object of the tour was to better acquaint business men and oil executives with conditions in the oil development area in southern Illinois.

* * *

Marshal MacArthur of Quaker Petroleum Company, Omaha, Nebraska, spent a few days visiting around the trade in Chicago last week.

* * *

Miss Marceline Marquis, editor of the Warren Petroleum Co.'s house magazine, "Warren Gasser," will leave this week for a three weeks trip to New York, Washington and other eastern cities.

* * *

H. A. Rucker, who formerly published "The Oil Journal" at Oklahoma City, has moved to Jackson, Miss. where he will publish current data on oil activities in that state.

* * *

R. L. Gay of Zwolle, who discovered the Zwolle field in Sabine parish, northwestern Louisiana, is now a candidate for state senator from his district.

* * *

Carter Oil Co. has opened a land and geological office in Mississippi. **Rhea J. Smith,** formerly with Standard Oil Co. of Louisiana, will head the land department. **David Harrell,** formerly with the Carter force in Illinois, will head the geological staff. **Dan Cameron,** who was stationed until recently at Mattoon, Ill., has been sent to the new office as scout.